The Builder.

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Glasgow, and its Improvements.

GLASGOW received the Social Science Association with warmth and earnestness, and the Congress, from most points of view, has been a successful one. Let us hope that the outcome will be good: that the many valuable thoughts and suggestions which were elicited during the week will not fall disregarded, but that practical good will result from them. Much that is said during the discussions is absolutely lost, except so far as it may go to mould the opinions of those present. The reporters, to the extent of their light, pick up such bits here and there as they may think best, or easiest to shape, but the greater part of the talk, good and bad, goes for nothing. The address of the president, the Earl of Rosebery, was interesting and useful, as our readers have seen, and his lordship has displayed his ability in other ways during the week. It was a mistake, nevertheless, to place so young a man at the head of the Congress, and should be avoided on another occasion. The President of the Social Science Association should be able to speak with the weight which years and experience give. All credit, however, to Lord Rosebery for the manner in which he discharged the duties of the office. We shall hear more of him, and good of him, hereafter.

Our present business is with Glasgow, where very considerable improvements have been made since we visited and examined it some years ago. Still we are bound to confess that, after what we have heard in London of the results of the Glasgow Improvements Act, we looked for something more than we found. With great wealth and intelligence in parts there is an enormous amount of ignorance and poverty in Glasgow. Go from the wide, handsome, though somewhat monotonous streets into the wynds and courts of the High-street, Trongate, and elsewhere; ascend the frightful "common stair," and you find room after room filled with a population in a condition of health which forbids the hope of either happiness or morality. Of forty children of whom we saw something, scarcely one seemed to possess more than half a life. If the average death-rate last quarter was 28 in the thousand, there are parts where it is at least 50 in the thousand. The people of Glasgow will say they have heard all this before for years. No doubt: and therefore the more shame that the same thing can yet be said. There are men in Glasgow fully alive to the importance of sanitary improvement, the condition of their city, and the necessity of carrying out with vigour the powers they possess. At the same time there is much apathy, much disinclination to spend money in pursuit of what they fancy a problematical good, and the sanitary reformers need all the support from without that can be given to them. Premature death and preventible sickness cost Glasgow thousands a year. A sixpenny rate may be grumbled at, but what is that compared with doctors' bills or the life of those we love? And it is quite certain that those beneath cannot be allowed to fester and rot without those above suffering also. The laws of health are inexorable. If we disregard them we must inevitably fall.

A valuable paper was read in the Health Section by Bailie Morrison, chairman of the Committee of Management of the Glasgow Improvement Trust, on the "High Rate of Mortality in Glasgow," in which he described the measures taken by the municipal authorities to reduce it. The pith of this we may usefully print. It was written in reply to the question,—"In what way can healthy dwellings for working-men be erected, in lieu of those removed for the purpose of carrying out sanitary or municipal improvements, or for other purposes?" The reply is an epitome of the measures adopted by the municipal authorities of Glasgow to remove evils of the greatest magnitude, and ameliorate the condition of the lower classes, as principally carried out under the "Glasgow Improvements Act, 1866," in the hope that these experiences may be the means of assisting other cities similarly situated.

The high rate of mortality in Glasgow has long been a source of the deepest regret, and has engrossed the attention of the civic authorities, more or less, for the last thirty years. It arises from a variety of causes, the chief of which Mr. Morrison set forth, and afterwards described the condition in 1865 of what may be designated "Ancient Glasgow," covering an area of about 88 acres in the centre of the city, where a population of 51,304 was packed together at the average rate of 583 persons to the acre, in upwards of 10,000 houses, the walls of which were permeated with disease. The population of the whole city in 1865 was 423,723, so that fully 12 per cent. occupied houses unfit, in every sense of the word, for human habitation, rapidly spreading moral and physical deterioration. The death-rate over the whole city was, as might be expected, 32·8 to the 1,000, which increased in 1869 to 34 to the 1,000, and the average death-rate of the 88 acres specially alluded to was 38·64 to the 1,000. These figures still, however, fail to convey an adequate idea of the rapidly-increasing over-density. The Improvement Scheme comprises 40 areas, in the worst of which, and in portions of the others, the population was housed at the rate of 1,000 to the acre, or 640,000 to the square mile. In these plague-spots and feverdens the death-rate was as high as 52·21 to the 1,000 in 1865. In 1870, before demolition commenced, it rose to 70 in the 1,000.

The powers under existing public legislation were totally inadequate to enable the authorities to remedy evils of such magnitude; and after an abortive attempt by several public-spirited citizens to deal with the worst portion of the evils at their own risk and expense, which failed through want of compulsory powers of purchase, the Corporation, with the consent of the inhabitants, applied for a special Act of Parliament to purchase the properties, paying fair compensation to the heritable proprietors, on the footing of a compulsory sale, the value, failing arrangement by private negotiation, to be fixed by arbiters or a jury. Plans were prepared, showing the properties to be taken, and Parliamentary notices, in the usual form, were served on all the heritable proprietors whose property was needed, none of whom opposed the Bill. The value of the property scheduled is upwards of 1,500,000*l.*, and the preamble of the Act narrates:—

"Whereas various portions of the City of Glasgow are so built, and the buildings thereon are so densely inhabited, as to be highly injurious to the moral and physical welfare of the inhabitants, and many of the thoroughfares are narrow, circuitous, and inconvenient, and it would be of public and local advantage if various houses and buildings were taken down, and those portions of the said city reconstituted, and new streets were constructed in and through various parts of the said city, and several of the existing streets altered, and widened, and diverted, and that in connexion with the reconstitution of these portions of the city, provision was made for dwellings for the labouring classes who may be displaced in consequence thereof."

The trustees are the members of the Town Council, and the operations are managed by a committee, who report their proceedings to the general trustees. The compulsory powers of purchase are confined to the properties scheduled, and there is no power to remedy evils of a similar character in any other portion of the city, except the general provisions of "The Public Health (Scotland) Act." The Act was passed in 1866, and the purchasing of the property needed commenced with vigour; but it was 1870 before any improvements of an extensive character could be begun, the trustees finding that if they proceeded with reconstruction before having acquired at least the greater portion of the property, they would materially increase the value on themselves. The operations, when completed, involve the purchase and demolition of upwards of 10,000 houses, which no structural alterations, however extensive, could make healthy residences; the gradual removal and spreading of the population resident there; the laying off the ground in open spaces, and formation of forty new streets to be cut through the centre of the districts; removing sanitary evils and affording commercial facilities; and the re-sale of the surplus lands for the erection of modern buildings, subject to the conditions, provisions, and restrictions of "The Glasgow Police Act, 1866," and the authority of the Dean of Guild Court.

For the purposes of the Act the trustees are authorised to borrow 1,250,000*l.* on the security of the assessment and property acquired by them; and as a proof of the monetary confidence in the measure, loans to an extent far in excess of their requirements have been freely offered them at a lower rate of interest than is usually paid in Scotland on heritable security. The sum originally estimated to be assessed, as the cost of the improvement, involved an authorised tax of 6*d.* per pound on rental for five years, and 3*d.* per pound for ten years; but the operations of the trustees have been carried out more successfully than was anticipated, and the rate of taxation has been reduced as follows,—6*d.* per pound for one year, 4*d.* per pound for four years, 3*d.* per pound for two years, and 2*d.* per pound for eight years. This difference of the assessment produces about 177,000*l.* less than the trustees would have received under the original scale, but the sum at their disposal will be sufficient for the purposes of the Act. It will thus be seen that these evils, many of which were the growth of centuries, fell to be remedied by the ratepayers during fifteen years; and Mr. Morrison thinks that the dissatisfaction freely expressed on this point had reasonable foundation, and that it would have been more equitable to have extended the period of assessment over a longer series of years at a lesser rate.

The assessment for city improvement is in addition to a tax of 2*d.* per pound for general sanitary purposes, so that the ratepayers expend about 40,000*l.* per annum in their attempts to ameliorate the condition of the people, and lessen the high rate of mortality.

Although possessed of compulsory powers, and entitled to take possession of the properties under statutory notice, the trustees deemed it politic to purchase the properties, as far as practicable, by private negotiations. The various proprietors, or their agents, were waited on by an *employé* of the trust, and offers solicited; on obtaining which the property was inspected and valued by two of the trustees, with competent assistance, and, on their report, the committee either accepted or declined the offer made. As a proof that these negotiations have been fairly conducted on each side, it was mentioned that up to 31st August upwards of 1,000 tenements had been purchased, at a cost of 1,241,353*l.* 17*s.* 9*d.* Only sixty-four of these were referred to arbiters, and even of these many were *pro formâ* rendered necessary for the personal protection of trustees or agents, in the absence of beneficiaries, or from some other unavoidable cause.

The changes to be effected will extend over a

period of probably not less than twenty to twenty-five years. Although the time is limited during which the trustees must either acquire the property or serve notice of their intention to do so, there is no limitation as to the period of reconstruction, which can only be proceeded with gradually.

It was feared at one time, said Mr. Morrison, that the dispersion of the low class population might have a tendency to spread crime and disease, and was a most dangerous experiment. None of these fears have been verified; on the contrary, the police and sanitary inspectors have repeatedly certified that the whole condition of the population displaced has been improved, and, although paying higher rents in other districts of the city for houses worthy of the name, they are themselves satisfied of the advantages of the change.

The Committee of Health, elected by the Police Board in 1870, and the officials under their charge, have been of the greatest assistance in these changes. Without close supervision the pulling down of buildings would not have spread the population, who cling to their old haunts as long as possible, and the density would have been intensified by overcrowding of two or more families in one house, to the detriment of the health of all; but the supervision of the sanitary inspectors, and the prosecutions before the magistrate for such practices, have reduced this to a point so low as almost to imply extinction shortly.

Bailie Morrison urges that the general powers conferred by the Legislature on municipal and local authorities might, with great propriety be extended, especially the privilege of compulsory purchase of properties, the removal of which would tend to control the spread of epidemics, or which, in the opinion of the medical officer of health, were permanently unhealthy. He is further inclined to advocate that municipal and local authorities might be allowed, should they deem it necessary, to erect buildings of a better class in lieu of those removed, where needed, to accommodate the population dispossessed, such a clause being permissive and not compulsory, as in clause 23 of the Glasgow City Improvements Act.

As a rule, however, it is not judicious for an elected body, changing periodically, to undertake the erection of buildings which demand close attention for successful prosecution, and such a course is calculated to check private enterprise, which, in all ordinary circumstances, is usually sufficient to supply the wants of the community.

In Glasgow, for example, 3,085 houses have been demolished by the City Improvement Trustees, displacing an estimated population of 15,425; to provide for which, and the natural growth of the city, 26,794 houses have been erected within the municipal boundaries, under the provisions, conditions, and restrictions of the Glasgow Police Act, under the authority of the Dean of Guild Court, from the 19th of June, 1866, to the 31st of August, 1874, which are estimated to accommodate 133,970. This does not include the numerous buildings in the immediate outskirts of the city. And yet we saw great overcrowding in the city.

The propriety of erecting dwelling-houses for the working-classes from the funds collected by taxation has been often discussed by the trustees, and invariably negatived by large majorities. The only exception being the erection of male and female lodging-houses as a measure of self-defence for protection of health.

With the laudable intention of mitigating evils, a committee was appointed and an association formed, to erect lodging-houses for the loose, floating population; and it is worthy of remark that the gentlemen who faced these evils in 1847, at their own risk, and have erected and managed several of these lodging-houses successfully for twenty-seven years, were the most prominent in attempting, on a much larger scale and at considerable personal risk and trouble, the renovation of Glasgow from 1860 to 1866, prior to the passing of the Improvements Act, the lord provost, Sir James Watson, being chairman, and the late ex-Provost Blackie one of the directors.

The present accommodation afforded under the management of this association is about 600 nightly.

The importance of these institutions was very soon recognised by the municipal authorities, and on the application to Parliament, in 1866, for the City Improvements Bill, power was asked and granted for the erection and management of such public lodging-houses by the City Improvement Trustees. They have built and furnished only two yet,—one for males, capable of accommodating about 300 nightly, and the other for females, accommodating about 100 nightly. In each there is a large day-room, lavatory, &c. Each inmate has a separate bed, in small detached compartment, for their exclusive use. Great attention is paid by the matron and superintendents to cleanliness and ventilation. The charge was originally 3d. per night, but increased lately to 3½d. per night, including use of large cooking-ranges, &c. They are so managed as to be self-supporting, including 5 per cent. interest on the capital. The houses are inspected, at least once a fortnight, by members of the committee in rotation. The accommodation, though very plain, is superior in every respect to the low-class dens superseded. The stringent rules for maintenance of order are rigidly enforced.

With reference to an inquiry as to whether they had ever had any fever or epidemic disease in the lodging-houses, the secretary was able to state that they had had none whatever.

In 1872 the Town Council of Glasgow promoted a second Bill, which was sanctioned by the Legislature, for further improvements in other districts of the city, which involves the purchase of property to the value of 250,000*l.* for demolition and reconstruction.

Mr. Morrison says in conclusion,—"Many may be discouraged, and think the efforts to reduce mortality and crime have not succeeded. In estimating this, however, it should be kept in view that before these operations commenced the strong tide of disease and crime was rapidly increasing, and that if we have only checked its growth and arrested its progress, we have done a noble work. All the results beyond that are a mere indication of greater benefits in the future. The greatest obstacle to progress is the vice, ignorance, or apathy of the class sought to be benefited, and as education spreads their co-operation will be secured."

We sincerely hope that the Improvement Committee will receive the earnest and continuing support of their fellow citizens.

SOMETHING MORE ON FURNITURE.

Apropos of the publication of the catalogue of furniture at South Kensington, we promised to return to the subject, and comment a little more in detail upon the merits and demerits of some of the typical styles of furniture illustrated in that collection. Attention to the subject of furniture design is certainly required at present, if the average quality of design is to be permanently improved. In one sense no doubt it will be said that we are in the midst of a revival of taste in furniture, and that the very existence of the collection in the Kensington Museum indicates this. But, in fact, this revival, if it be one, is in very few hands, and even as far as it extends, is not by any means unassailable on the score of refined taste. There is among wealthy people a growing *penchant* for filling their rooms with elaborate furniture of some special type, such as the taste of each leads him to prefer, and this has given rise to the design and manufacture of certain styles of furniture, as a special branch of the cabinet-maker's art. But this fact does not much affect the general style of work to be seen in shops and in dwelling-houses. Except in the collections of one or two well-known makers, who have given systematic attention to the production of a high class of furniture, it is very rarely that we come across anything which recommends itself as original, graceful, and effective. Plenty of fairly good workmanship there is; not so much, however, as there should be, for good honest workmanship is one of the things which the public do not habitually care to pay for now; they prefer the cheap and rickety. But even where there is workmanship of a first-rate order, it is too often expended on designs which are no designs at all, but merely a putting together of familiar forms and tricks of design and detail, long since become vulgarised by incessant repetition, and often not good at the outset.

Artistic furniture may be effective and pleasing principally in two ways; either as being constructed and put together on pleasing "lines" (to use a shipwright term), and with the principal points emphasised by appropriate decoration; or it may be the vehicle for a display of art workmanship and design of a high type, and not practically related to the uses and ends of the object which furnishes opportunity for this display. This is the case where, for instance, carved figure subjects are introduced, representing definite histories or characters. A good many of the finest of the older examples of furniture existing are of this class, specimens which would naturally be protected and transmitted with more care than the less valuable works showing ordinary decorative treatment only. However desirable it may seem to apply the highest art possible in embellishment, it is necessary to consider the intention of the article to be adorned, and not to overweight a thing of purely practical use with decoration of so high a class as to convert it into an *objet de luxe*. A bookcase, sideboard, or cabinet, which is partly an object of show, will thus bear a much higher type of decorative addition than a chair or table is fittingly susceptible of, as a rule. The figure, especially, should be treated with respect in decoration, and not be introduced where it is liable to be knocked about or to appear as if doing the menial office of supporting a part of the structure.

If we examine the specimens at Kensington in which high art is achieved or attempted, we find them mostly of the class of object just referred to,—cabinets, dressoirs, &c. One thing which strikes us on examining these is the variation in the excellence of the figure design in work of the same date and of equal excellence in other respects. The French furniture of the date of 1560 and thereabouts, the work of Bachelier and others, of which there are several very fine specimens, shows us figure designs generally of much spirit and originality, sometimes natural, sometimes grotesque. The latter are nearly always fanciful and effective; but the natural figures are in many cases disproportioned, with a tendency to over-largeness of the head especially, and a curious rotundity of outline. Yet in one dressoir (4,051) of the same group and date which present these characteristics we find figures of a much superior order, and the centre panel with the group of Mars and Venus is almost the best and most artistic bit of carved design in the collection, and shows the hand of an artist. It is surpassed in finish and in detailed correctness of modelling by the figures in the two panels of the modern cabinet of Messrs. Fourdinois (2,692), but these latter have not the force and freedom of the older specimen. In the Flemish and German work, as we observed in our previous article, the figure subjects have a more dramatic character and a more living interest than in most of the French work; the distinction being very characteristic of the two nations; the serious German mind adopting sacred history or the more important of the classic legends as subjects; the more volatile French mind contenting itself by merely playing with the figure as an ornamental accessory. The thought of the Flemish figure-carver went beyond his power of execution, as in the grand Flemish retable (1049: believed to have been originally in St. Bavon's at Ghent), where the figures are ill-modelled, the hands all too large, but the expression on the faces, full of variety and pathos, and the bold carving of the masses of figures in relief, with the treatment of the broad deep folds of the drapery, combines to produce a great effect in this remarkable piece of work. An exception in the matter of execution is the fine ebony cabinet of the seventeenth century, called "Dutch" (No. 1,651), but evidently wrought under the influence of French or Italian taste. The crowd of figures in low relief on the front are for the most part beautifully executed, and the whole work deserves great attention as an example of high-class decoration suitably applied; the steel-like glitter of the lights on the polished ebony is very effective also. The unsophisticated Dutch taste of that period is probably better illustrated by the large oak cabinet near to this, and remarkably fine in design and general treatment, though rough enough in detail. In the Italian work of the sixteenth and seventeenth centuries we see to a great extent the same rather conventional and merely decorative use of the figure which characterises the French cabinet-work, but with a finish of design and execution to be expected in the country where figure design reached the highest point it has attained since the Greeks. A remarkably fine Italian example is the cabinet (No. 24), a quasi-architectural composition, with fluted and carved shafts on an architectural surbase. Here the Cupids at the sides are admirably executed, but they are very much the kind of thing after all which is the stock-in-trade

of decorative designs; other interest they have none. Yet, in the delicacy and finish of the Italian decorative design, somewhat wanting in power and conventional in taste as it usually is, we recognise an art far more in keeping with the associations of cultured and civilised society than the pseudo-Gothic of which we have seen so much lately; and in such an example as the mirror (7,226), with the sliding panel, showing a female head in profile, we are compelled to confess the supremacy of Italian art. There is scarcely anything in the furniture collection to compare with this noble and grand head, which seems like the epitome of the spirit of Florentine art, and raises "furniture" into the region of the ideal.

The figure-carving in modern furniture has too great a tendency to degenerate into mere accessory decoration without meaning. It seems to be enough that it is a figure, and is respectably correct; but we have always urged, and continue to urge, the employment of the figure in decoration with a definite meaning and motive, and not as a mere conventional accessory, especially not in those worn-out forms of "terminal" figures, with expressionless features and scroll terminations, which, "classic" as they may be thought, are surely a very hackneyed resource of the designer, and a very poor method of using the human face divine. In one most remarkable and elaborate work, that cabinet, also by Fourdinois (No. 721), purchased at a cost of 2,750*l.* from the Paris Exhibition of 1867, a most brilliant effect is produced by carving the figures in a light-tinted wood, let into the panels. Here the figures have a definite design and meaning, representing the characteristics of various arts, of the four quarters of the globe, &c., though perhaps not with great specialty of character, still sufficiently so to evoke interest. The piece referred to is a remarkable specimen of constructive polychromy in woodwork; the woods employed being box, lime, holly, pear, walnut, and unstained mahogany.

Leaving the subject of figure-carving, we find in the general decorative treatment of furniture several distinct principles or types prevalent in different times and places. One of the most generally prevailing, however, is what may be more or less considered as the architectural manner of designing furniture. As we observed in our former remarks, the application of architectural features to furniture is on critical grounds a mistake. A cornice supported by engaged columns, and with the usual Roman break of the architrave and cornice over each column, is, when applied to a cabinet,—a copy of a feature bad originally,—in a position and material to which it is still more unsuitable. One must admit, however, that some very capital work has been done in this architectural manner. A particularly fine specimen is to be seen at Kensington in the Jacobean cabinet lent by Mr. Millais, and placed in the south court. The execution of all the details of columns, cornices, and pediments, is most finished; perhaps a little too much so, giving the whole a somewhat hard appearance. There are, however, methods of applying architectural forms to cabinet-work, so as to give them, by modifying their character and proportions, all the appearance of being originally designed as cabinet features only. This was very well understood by some of the French makers of the sixteenth century, better, indeed, than by any other class of workers in the art. Of this, some of the dark oak cabinets of about the date of 1550–70 in the collection show admirable examples. We may specially mention that numbered 4,049 (from St. Lo, Normandy). Here features are used for instance, which are, as it were, reminiscences of columns, but reduced to short and squat proportion, and a baluster-like outline precisely suitable to the material in which they are executed and the positions they occupy. The cornice of No. 7,218, again, is no imitation of a built-up architectural cornice, though having the same general proportion to the substructure. It is treated in an entirely different and perfectly suitable, as well as effective, manner. This point should be particularly studied by furniture designers; for the finish of a work of the cabinet kind at the top is a difficult point, and, in an immense majority of cases, is got rid of by adopting (not adapting) a form peculiar to masonic architectural design.

The execution of this sixteenth-century French furniture, crisp, bold, and not polished up as in modern work, leads one to doubt whether the high finish characterising much modern work, French especially, is really any addition to the artistic value of the work. The old cabinet-carver left the process of carving, almost the tool-marks, perfectly visible on his work. The modern ornamental carving is sand-papered, polished, and finished up till it almost loses the appearance of having been ever cut out, and assumes the rounded polished surfaces of moulded ornament, or of forms which have grown naturally into their present aspect. There is a charm about this high finish, and we would not say that it is not the most suitable in some situations,—in a luxuriously furnished drawing-room, for instance; but comparing the bold and effective result obtained in the old work, the extra labour on polishing and finishing does not always seem to hold a proportionate value. It destroys surface tone very much, and weakens the spirit of the work, and may avail, too, to cover many deficiencies in the carver's craft, which thus has not the same stimulus to excellence as when the effect depends wholly on the use of the tool. The modern Gothic movement in England has led to a resumption, to some extent, of the tool-finish of old work; but its advocates talk as if this were something peculiar to Gothic work, whereas it is as fully illustrated in much old Renaissance work as anywhere else.

The merit of the design in more every-day and practical classes of furniture depends in a great measure on their suitability of treatment. The supports of a table, for instance, are most satisfactory when treated purely as supports, and not metamorphosed into figures or festoons, which have no relation to their position. In this respect the Dutch ebony cabinet before mentioned, and one or two of the old French tables (Nos. 7,216 and 7,221 especially), are good examples, where the supports are admirably treated so as to present effective forms, and with just enough surface ornament to relieve without weakening them. In the matter of chairs, we have to steer between old-fashioned clumsiness and awkwardness, and new-fashioned flimsiness. There are many fine types of chair in existence which are little used now, partly because modern habits have become so luxurious and lounging; otherwise there is, perhaps, none which combines ornamental appearance, suitability, and sound construction better than the well-known old Venetian chair, of which there are a good many specimens here, formed out of three solid slabs of wood, shaped, pierced, and carved for the seat, back, and front support. These are the chairs, however, of an alert and dignified society, not given to lounging and reclining. The favourite seats of any period have a good deal of character; and any one who observes the large, deep, amply-cushioned chairs which fill our furniture shops now, might draw his conclusions as to the love of ease and indulgence in modern society. What is noteworthy about these Venetian chairs, and some other old Italian types, is the picturesqueness of the construction, which at once gives a character and outline, rendering it effective in mere form, independently of added ornament. There is something much more piquant and interesting in these than in the mere quadrupedal chair of modern times, standing on four sticks. A curiosity in chair ornament is to be found in the Italian chair, No. 7,192, where the arms finish in a large knob, with a necking, worked out of the solid, and with a loose moulded ring left round the necking, evidently also worked out of the piece, and ingeniously separated by undercutting. The device is ingenious, but not worth the trouble that must have been expended on it.

The prevalent form of the leading lines in furniture has a most important effect on its character, and has varied very much in different schools. In a general way the prevalence of tolerably straight lines and rectangular forms gives the best results, as most in keeping with the nature of the materials used. In the best old Italian, French, and English work, though the outline is always sufficiently broken up and varied by carving and ornamental detail, the main lines are nearly always rectangular and straight. The superiority in effect of this work over the Louis Quinze collections of unmeaning scrolls is incontestable. In observing characteristics of shape, however, we cannot but be struck with the broad distinction between furniture of Oriental origin, or of the Oriental type, and that of the West and North. In the former, colour and surface decoration form the main portion of the ornamental treatment; the outline sinks into insignificance, and the cabinet, table, or other object becomes a mere square, flat-sided, straight-legged box, leaving the largest possible undisturbed surface for colour and inlay. The Spanish and Portuguese work, which, owing to Moorish influence, exhibits a great deal of the Oriental type of art, illustrates this. The Portuguese cabinet No. 782 is a very typical instance, absolutely square and, we may say, without design in form, but covered with symmetrical inlay ornament of a very good type. Another from the same country (777) shows a combination of ebony and ivory in an inlay diaper pattern, simple, but very effective as a whole; and an Italian inlaid cabinet (7,222) is ornamented with geometrical arrangements on the same principle, though more elaborate. The curious Spanish cabinet (294*a*) illustrates what inlay cannot so well do; it is a representation of the animals entering the ark, with landscape indicated by conventional trees and conventional birds in them: the result is characteristic, but absurd. Inlay is a beautiful and remarkably durable style of ornament, but it needs to be used with judgment, and not taken out of its true use as a means of flat surface decoration. Attempts at perspective in inlay are usually entirely unsatisfactory. The peculiar type of inlaid work practised at one time in Italy under the name of *tarsia*, and in which the effect is produced by woods giving different shades of the same tone, and further discriminated by being placed in opposite ways of the grain, is capable of very interesting and beautiful results, and has a higher interest than ordinary inlay, as being less of a mere mechanical process, and partaking more of the work of the artist in light and shade. The specimen No. 7,399, representing the interior of a press containing ecclesiastical utensils, is a misuse of the art, an application of a laborious and delicate process to a subject not worth it. But the sitting female figure in tarsia on the panel (No. 5,785), is a noteworthy piece of work, very fine in the composition and in the treatment of the drapery, and in the manner in which the grains of the different woods are made to overlap and run into each other, so as to produce a softened and rounded effect. The features are not quite successful, and one may doubt whether the face could be adequately treated in this process, except in profile; but it is, within certain limits, a truly fine and artistic process, and derives much effect from the manner in which the outline and shading partially loses itself in different lights, so that the design appears to come and go on the surface. The delicate effects which can be got by this process, and its great durability, would render it worth taking up again for designs of a high class; but only for such.

As we have observed, when colour decoration is an object, form becomes secondary; and we have seen a great deal of illustration of this in recent English furniture. A demand for colour has led to the frequent employment of a stiff angular type of design, very uninteresting in form, and only valuable as the field for coloured decoration by means of tiles or painting. Our opinion of the overdose of tile ornament in furniture has been more than once expressed in the course of criticism on the annual array of furniture in the International Exhibitions. Of the painted furniture, we can only say we wish it were not so often of a very unrefined type. Kensington Museum possesses a specimen (in the south court) of the result of the combined design of a well-known architect and an eminent artist; the cabinet decorated in colour, and painted by Mr. Poynter, with the "battle of the wines and beers." The authorities seem to set great store by this; we feel compelled to pronounce it a very inartistic affair, unpleasing in outline, and really tawdry in colour,—a thing we should hope very few persons of any pretension to good taste would wish to see in their sitting-rooms. There is something, of course, in Mr. Poynter's figure-decoration; but, on the whole, we cannot help feeling it a pity that so excellent an artist lent his name to a rather foolish joke.

In contradistinction to this square, painted style, we are now offered in some quarters the revival of the furniture of the Queen Anne and Georgian period, of which Chippendale and Sheraton were the leading makers. Of this school there are one or two good specimens in the Museum, such as the dressing-table (635), the decoration of which is only painted, unfortunately, not inlaid; but which in form is very characteristic of the school, as well as of the social period which Tennyson so happily characterised as the "tea-cup times." This type of furniture revels in curved lines and surfaces, really unsuitable, as we have before said, to wood

construction, and which, in fact, seem designed to create difficulties of execution in order to overcome them. There is much to be said for this school of furniture design, however. Its execution is nearly always first-rate; and articles which appear slight are so well made and put together as to have a fair chance of outlasting more bulky-looking objects. There is much fancy and elegance in its forms, as particularly in the specimen just referred to; and it deserves, also, the praise of being a purely original type of furniture design, not imitative of anything else, and not dependent on the reproduction of forms properly belonging to architecture. In this respect it is far superior to some of the most belauded modern Gothic furniture, with its shafts and arches, and imitations of tiled roofs, &c.; and if somewhat wanting in dignity, it has at least elegance and refinement to recommend it. We are willing to take this opportunity of mentioning that a well-known spirited firm of furniture makers, Messrs. Morant, Boyd, & Blanford, are giving some attention to this type of furniture, and have made some very able and successful reproductions of it. Without wishing for mere reproduction of any pure style, we should be glad to see the undoubted merits of this style recognised, if only to lead to a little reaction against what may be termed the ostentatious clumsiness and inelegance of a good deal of work which is put forward in so confident a manner as "Gothic," but which really has not much affinity with the best type of Gothic furniture.

Of work in which beauty or costliness of material constitutes the value, rather than design, we are not without specimens in the Museum, which unfortunately seem to be the chief attraction to the majority of visitors. We could deplore the purchase for the Museum of the elaborate and costly cabinet by Wright & Mansfield (548), glittering as it is with polished satinwood, gilding, and Wedgwood plaques. As for any *design* there is in it, this might have been sketched out in ten minutes, for it is nothing but a repetition of common-place details put together without thought or meaning. Of the same class of mere material excellence are the French Pompadour console tables, with their twisting and sprawling masses of gilt scroll-work. The Venetian gilt furniture of the last century, bequeathed by Mr. Barker, and the elaborate cabinet and pier glass of Messrs. Jackson & Graham (7,247) are more refined specimens of work, of which, however, the interest is merely in their general glitter and sumptuous appearance. The latter work is splendidly executed; but the gilt caryatide figures and the enamel painted pictures are valueless in any high art point of view, and the details are a meaningless combination of incongruous forms. And in general we should be inclined to say that gilding, *en masse*, is the enemy of artistic furniture. It is a means of creating a sham value for work which has little real value. Good figure-carving, indeed good carving of any kind, is spoiled by wholesale gilding, which destroys the effect of light and shadow. It is much better applied partially to ornament to relieve and heighten its salient points, than as a general coating plastered over the whole, and producing a mere "bullion" beauty. This conclusion is borne out by the fact that almost all the wholly gilt furniture in the Museum belongs to an inferior type of work artistically. When a man has made something worthy of study as a design, and for its own sake, he does not want to cover it with gilding, to blunt the edges and destroy the shadows of the work. Gilding is a very good servant to the decorator in every branch, and the worst possible master.

Among new specialities of material those interested in the matter should notice the modern Danish cabinet in the South Court, composed of ebony, polished steel, and tortoiseshell. The ebony forms the main part, the steel being let in as mouldings and in the capitals of the pilasters, and the tortoiseshell (crimson and green) in the panels. The art value of the design is not great; but it is suitable for exhibiting the materials, and the effect of the combination is very rich, and would be highly valued by painters as a background or accessory in interior scenes. The execution is admirable.

While valuing new effects in material very much, however (and they are often suggestive of new design), we are more in want of originality and artistic feeling in design and execution. We have several types of furniture being practised now by designers and makers. There is the straight-lined and square ebony (or ebonised) type, generally ornamented with tile inlay, and tolerably satisfactory in effect, but not very artistic in outline or in detail. There is the bulky, somewhat homely, style of Gothic oak furniture, with carved panels, of which an excellent example from the design of Mr. Tarver is in the Museum. There is the rabid Gothic style, painted in all the colours of the rainbow, of which we have expressed an opinion. And now there is this "revived Classic" or Georgian style. The latter is too wanting in mass and dignity to be quite satisfactory; most of the others too deficient in grace of line and construction. But all of them have a character, and in this respect stand out from the mass of contemporary furniture, which, like Pope's "most women," has "no character at all." And it is character and originality of fancy which give interest to a piece of furniture, not beauty of material, nor even of workmanship, though the latter is a *sine quâ non*. It is the total want of originality or definite character which makes the gilt scrollings of the Pompadour period so uninteresting; it is the presence of fancy and originality in the outline and putting together which gives grace to the Chippendale and Sheraton furniture in spite of its weaknesses of style, and a much higher interest to the fine and picturesque work of Germany and France in the fifteenth and sixteenth centuries. And that is what we want to see more of in modern furniture; the perception that real intellectual interest may be imparted to such objects of practical use, not by the selection of costly and expensive materials, but by the exercise in each of them of individual thought and fancy, instead of the mere repetition of any fashionable or customary type. The highest achievements of the art must always be expensive; but within certain limits it is as cheap to make a good design as a bad one, and we should feel almost more interest in seeing the average type of furniture design varied and improved, in forms accessible to the less wealthy classes, than in the costly elaboration of a few picked specimens. It is possible, no doubt, to do without artistic furniture. It is not a necessity of life. But it is no unimportant element in realising that kind of beautifying of every-day life and of common things, which is an end not to be despised, and which it is the province of art to provide for.

THE EXPLOSION ON THE REGENT'S CANAL.

If one of those iron monsters which have of late been constructed in the naval yards of private English builders for the navies of foreign powers had returned to our waters, glided up the Thames, and opened a bombardment upon London, we question whether four-and-twenty hours of its fire would have caused more material damage than did the explosion which shook the entire metropolis at a few minutes before five a.m. on the 2nd current. Had the evil been wrought of the set purpose of man, and under the malign pretext of war, the national humiliation, anguish, and wrath would, doubtless, have been a hundredfold that actually experienced. As far as loss of life, or limb, was concerned, the damage probably would have been greater, although even here a doubt may exist.

In all cases of sudden calamity the first instinct of mankind is self-defence. The language of that instinct has been expressed, in words never to be forgotten, by the great Poet of Humanity. "Thou canst not say I did it," is the expression of sudden fear rather than the voice of conscience. It is not to be wondered at that when a calamity is of so vast a magnitude, the fear of personal responsibility should be almost the first motive to make itself apparent. It precedes in time—although we may well hope that it will be only a transient phase in the public mind—the warm outflow of that kindly and charitable feeling on the possession of which our countrymen may with justice be congratulated. Nor are we about to say that it is unreasonable. "To be just before we are generous" is an ancient adage of great respectability. It may be regarded, by some of us, as a somewhat commercially-framed maxim,—but let that pass. It is essential, in a highly complex state of society, for persons to know, not so much their own rights, as the rights of others with regard to themselves.

Therefore it is that, with the very earliest notice of the calamity are mingled the tidings "the insurance companies are not responsible." They usually except explosions. The Canal Company denies responsibility. The question further arises, whether owner or occupier is to make good the loss, as far as buildings are concerned. As to furniture, the incidence appears to be on the owners of it alone.

With regard to any responsibility on the part of insurance companies, it is, in the first instance, a legal question, to be decided on the express language of the policies of insurance. As a general rule, insurance is against fire; and, in such cases, it would be unjust, even if it were possible, to throw upon the parties to a contract, intended to apply to a conflagration, an *onus* arising from a totally different source. In case of fire breaking out, in consequence of the ruin, (a misfortune which very generally supervenes in case of earthquake), the damage from actual consumption would probably lie at the door of the companies. Then there are cases of special insurance; as, we believe, in case of plate glass, in which the fact, and not the cause, of damage is contemplated by the contract. In such cases, we conceive, the insurers' claim would hold good. But that also is a legal question, although a simple one, hinging on the express terms of the contract.

As a matter of public policy, any successful attempt to throw upon any insurance company the *onus* of a calamity not contemplated in the scale of charges, would be a public misfortune and evil. In a case like the present, it might lead to the bankruptcy of many a company, and thus only spread wider the desolation occasioned by one fatal moment. Even if this were not the case, the inevitable effect would be the raising of the rate of fire insurance all over the kingdom. At all events, no company which, after such a lesson, failed to take proper measures in self-defence for the future, would deserve to retain or to earn public confidence.

The Canal Company may be said to be protected by the very magnitude of the evil. If it were at all possible to make that body liable for the damage occasioned on its premises, the result would simply be the extinction of the body of proprietors. The whole of the property would be swallowed up, and the traffic would have to be carried on for a syndicate of creditors. The public would again be the sufferers, as well as the innocent proprietors. Still, the motto may be cited, "*Fiat Justicia, Ruat Calum.*" That is true; but the question remains to be solved, what justice is.

The question as between the owners and the occupiers of the houses is one more pressing and more widely felt in its urgency than either of the preceding. It is one as to which we feel that it does not become us now to offer an opinion. It must be settled, now and for ever; and as it will, no doubt, be settled by competent authority, we prefer to await that decision. In this patience we trust that the sufferers will follow our example, and not allow angry feelings and minor contention to follow public and terrible calamity, as the vultures and dogs congregate on the morrow of a battle.

It has, however, been our great principle, borne up in our columns as a banner, that *it is criminal not to prevent preventible calamity.* It has been chiefly with regard to preventible disease, and to neglect of proper sanitary precautions and remedies, that we have had to urge this important practical truth. But it has a wider, if not a universal, application. And in questions of criminality, there is not only the legal, but the personal part of the matter to consider. There can be no crime without a criminal, even if the agent find himself unexpectedly involved in that terrible category.

We are not referring to any degree of blame, more or less, that may attach to the men in immediate charge of the fatal cargo. While matters are under legal investigation, it becomes the press to preserve an absolute silence on anything that may have a personal bearing. And the poor fellows in question have passed from the scope of human censure and human justice, even had they deserved to encounter it. The worst that can be suggested against them, so far as we are yet aware, is, that a pipe may have caused the explosion.

But are we to glide back into the old helpless groove of unavoidable accident, and no one to blame? or, are we to make of the poor men, so rapidly swept from life, not so much scapegoats as sin-offerings? We do not want to crowd our plain English-speaking columns with foreign words. But there is another legal maxim which must be quoted in its own language,—"*Judex damnatur quum nocens absolvitur.*" The judge is condemned when the

wrong-doer is absolved. Who is the wrong-doer in this case?

We think that the English public must take the blame on its own shoulders. If this be so, it is well that it should be distinctly understood. Nay more; we may rejoice if this should prove to be the case, and that for two reasons. First, because a conviction of the fact should tend to relax our purse-strings, to stimulate and to direct that healthy, blessed, current of private beneficence, which is ever welling out among us,—directed sometimes to noble, and sometimes to mistaken or even unworthy objects; but never failing, we trust, to be at least singly blessed.

The other reason is, that if we find it to be our own fault, as a people, that preventible mischief occurs, it lies in our own power to amend the fault, and that without delay.

Will any one question whether the word preventible is, in this instance, rightly employed? To our view there are calamities,—few, but great,—which *are* beyond the scope of human prevention. Absolutely unpreventible indeed, there is, we may say, only one. That is earthquake. No human provision is there of much avail. For, if certain countries may be avoided as being the very home and nest of earthquakes, geology shows us that no part of the earth possesses an immunity from that terrible visitant. It is, at all events, a question of time and of cycle. Volcanoes are limited in the range of their destructive power. "Lightning and tempest, plague, pestilence, and famine," all have their appropriate shields, or precautionary measures. Science, in the order of Divine Providence, offers a great boon in reply to the litany on this subject; and although absolute immunity from these sweeping master calamities is not yet given us, we can do much to protect life and property from lightning and tempest, to choke and trample out plague and pestilence, and so to draw on the wide-spread bounties of the earth, on which bad seasons are always local in their limitation, as to secure us from any great danger of famine.

If any one will argue that the explosion of 4,000 lb. of gunpowder, within the area of the metropolis, is a natural misfortune, or an event which should not have been rendered impossible by a sane legislation, we decline to attempt to convince him. From three to twenty-two barrels, or from 270 lb. to 1,980 lb. of powder, are the charge allowed by military rules for the hasty demolition of a magazine. Is it creditable to the civilisation of the day that it should be possible to fire off double that quantity in the very bosom of the capital?

The fact seems to us to be, that, in this terrible calamity, we see one of those *contre coups* which result from our excessive dislike of interference with our personal liberty. There is no doubt that we owe very much of our national independence, and even of our national grandeur, to this strong instinct of an Englishman. But there is also no doubt, in our minds at least, that we are apt to err on the wrong side, and to be stupid and rash when we think that we are sturdy and independent. We have, in fact, admitted that much, in principle, by recent legislation. We have endeavoured, as far as Acts of Parliament can do so, to check the personal liberty which has been so long possessed and acted on by our miners, to destroy their own and their neighbours' lives. We have interfered, to a very wide extent, with the Englishman's right to do what he will with his own, in the matter of the education of our children. Our statute-book is now framed upon the broad principle that public safety, or even public welfare, over-rides private right. It behoves us to see that this sound and salutary principle is so carried out, that the possibility of causing terrible calamities should no longer be left to the convenience of carrying companies, or to the intelligence, the care, or the self-denial, of their servants.

We are not now to be told what is the danger attendant on massing together large quantities of explosive, or of highly combustible matter. Gunpowder, guncotton, dynamite, petroleum,—these dangerous elements are well known. Certain precautions are usual with regard to them. Such, for instance, is the situation of a powder-mill at a distance from human abode, and the prohibition to let any one enter the precincts with nailed shoes, or iron-shod staff. But what is the wisdom of the law, or of the administrative arrangement, which can prevent the manufacture of powder within our towns as a source of danger, and yet allow of its being stored in bulk, or even carried in dangerous quantities through our streets? We acknowledge danger. We admit both our right and our duty to guard against it, and then,—we half do so. We send the powder manufacturer to the marshes of Essex or the downs of Surrey, and then we allow the common carrier to convey the death-dealing conductor of stored-up power through our highways, in leaky kegs, in company with petroleum, and in quantities which, in exploding, can shake London as with an earthquake. We are not using a mere figure of speech. We speak from personal experience of the effect in the city of Naples, of the great earthquake which, in 1857, killed, it was said, 50,000 persons in Calabria. The damage done at the centre of the district that felt the shock was greater, but that suffered at Naples was as nothing compared to the shock of the 2nd of October.

One practical result, then, of this great calamity must be the framing of a well-considered Act of Parliament to prevent the possibility of its repetition. We trust that this measure will not be left to any *amateur* initiation, but will be at once taken in hand by the Government. The maximum quantity of any explosive substance which may be conveyed in the same cart, boat, or other carriage, or train of carringes or boats, or which may be deposited at any time within the limits of any town, or in any place other than a magazine expressly constructed for that purpose, should be accurately defined; and any person or persons who in any way infringe or aid in the infringement of these provisions should be subject to a sharp personal penalty not within the power of a magistrate to mitigate. Ignorance of the contents of packages should not be allowed to be pleaded in bar of this penalty, which should apply equally to all concerned,—packers, consignees, or carriers. In addition to this, the character of vessel in which it should be alone allowable to place gunpowder, or other explosives, to be specified by the Act, should be fixed by law. That would at once stop two sources of danger. It would prevent leakage (which must have occurred previously to the recent explosion), and it would prevent ignorance of the contents of a powder-vessel. We abstain from giving any opinion as to the absolute prohibition of well-made wooden kegs, but we strongly call attention to the propriety of the exclusive use of copper vessels.

An Act of Parliament of this nature,—framed so that a plain man could read and understand it, free from legal jargon, and leaving no option as to its enforcement,—backed with a good premium for any evidence of the infringement of the law, would be a national advantage for which, if we have paid a terrible price, that price will not have been altogether thrown away.

There are several important questions on which an accurate knowledge of the details of this terrible explosion may throw valuable light, if they are carefully collected. The quantity of powder fired is known, or at all events ascertainable. A knowledge of the extreme range at which damage was done, and of that at which the explosion was felt or heard, with different degrees of distinctness, will be a very valuable contribution to our knowledge of explosive power. Again, the question of direction, whether as regards the set of the wind or the intervention of trees or buildings, it is most desirable to settle. For example, it will be of interest to know how far the area windows, or those below the level of the ground, escaped destruction, when the upper windows of the house in which they are found were destroyed. Also, to what extent windows facing the explosion were broken, while those at right angles or oblique to it escaped. It so happened that, in the year 1856, two very formidable explosions occurred in the city of Naples, which the recent event calls to mind. One was that of a powder-magazine at the entrance of the port, the other that of a steam frigate, the *Carlo Terzo*, in the harbour. The first occurred between 11 a.m. and 12 a.m., the second between 11 p.m. and 12 p.m. In each case, one of the first phenomena which struck those who hurried through the streets to learn the cause, was the covering of the footways with a fine white sand, or gravel; being in fact the window glass of all the windows in the streets, shivered to dust in its fall on the solid lava pavement. The evening explosion extinguished all the gas in the city. It occurred on Sunday night, and the great opera-house of San Carlo was full of people. The effect of that sudden thunder-clap, and the instant extinction of the brilliant lights of the theatre, will never be forgotton by those who were present.

One phenomenon attended these two explosions in Naples, which may be well worth the attention of the medical profession, and of those whose nerves have suffered from the shock of the 2nd of October. To many persons, in the fiery climate of volcanic Naples, the effect of the first shock was very serious. For two or three days the barbers were fully occupied in bleeding their customers,—blood-letting being the first resource of the Italian when he is frightened or affected by any shock. But the sense of some impending danger seemed to brood over even those who were not driven to the doctor or the barber. With the second shock, this cloud seemed to lift. Instead of producing an accumulated effect, it seemed to counteract that of the first. We offer no theory on the subject. It was matter of common attention at the time.

Another point of very unexpected occurrence is the difference of the effect produced on herbivorous and on carnivorous animals. The noble collection of the Zoological Society were very near the centre of the explosion. The lurid blaze must have been witnessed by many of the animals; the terrible shock felt very sharply by all. The fact that more mischief was not done to the cages and buildings, and especially the immunity of the glass windows of the receptacles for the serpents, reflects the highest credit on the constructors of those edifices. Had the venomous reptiles escaped, or even some of the larger carnivora, the terror, if not the actual damage, ensuing, would have been very great. Among the animals, however, the sense of fear seems to have been most predominant in the herbivorous genera. Horses, both in the stables and in the streets, suffered much and long from terror. A young red deer was absolutely paralysed by fright. Nothing of the same kind is stated with regard to the larger carnivora. It may be suggested that, in these animals, the emotion of rage is excited, when, in the vegetable-fed species, the effect is the production of fear.

Observation of this kind is not mere matter of curiosity. It may be of essential value to therapeutic science. We cannot but couple with the above a remark very recently made as to the different effects of the poison of foxglove on herbivorous and carnivorous animals. The action of this principle is specific on the heart; but is totally different in these two great groups of beasts. It is from indications such as these that some of the brightest triumphs of medical skill and science have sprung; and the importance of making accurate and detailed observations of all results of rare and striking phenomena cannot be over-estimated.

The first point, however, is aid and relief to the sufferers, especially those of the poorer class, who must have found themselves suddenly almost homeless. We cannot doubt that national support will be called forth by what is nothing less than a national calamity. The inhabitants of London had a rightful claim on the science and civilisation of the nineteenth century, for protection against so frightful a calamity. Never was there a great blow which, when we descend below that class whose education might have been supposed to be enough to lead them to watch over the common safety, by attending to legal and administrative precautions, fell on more entirely unoffending sufferers. As to this, the movement already in progress is such as to promise a guarantee. We can only add one voice here to a full chorus. But in succouring those who are in need of aid, noble and grateful as is the task, let none of us forget that it is our own house that is yet in danger. Let none of us rest till the law is put in water-tight working condition for our protection. It would be a great satisfaction to the public mind if the Government would at once announce its intention to bring in the protective measure now so loudly demanded by common sense. It could do no harm, but some good, if some of our friends in Parliament, who are already honourable for their exertions in defence of public health, would announce their intention to submit such a measure to Parliament failing such action. But, on all accounts, the best initiation would be that of the Government, and we shall anxiously await some notification of the intentions of the Ministry.

The Post-Pillars.—A correspondent requests us to call on the Post-office people to paint out the red colour which has been given to the letter-pillars in the streets of London. We are not disposed to do anything of the kind: they brighten up the streets,—as poppies in a field of corn.

THE SANITARY STATE OF LEEDS.

The Leeds Social Improvement Society have presented a much-needed memorial to the Town Council of Leeds, on the disgusting and unhealthy state of the town. The deputation who presented the memorial, was headed by the Vicar of Leeds, and Mr. Edward Baines, vice-presidents, and other officials of the society. In the appeal occurs this passage:—

"The following are special instances of nuisances, specimens only, it is to be feared, of what exist in other parts of the borough upon which the committee wish to lay stress, as fully accounting for the excessive prevalence of epidemic diseases in our midst and our high death-rate. Examples under each head of complaint are given at the end of this memorial:—

1. The filthy state of the privies, and the spaces round them, in the lowest parts of the town.
2. The absence of proper accommodation for children in these privies, which causes the pavement on either side of the crowded courts and yards to be covered with horrible filth.
3. The foulness of the ashpits, many of which are open to the air, while others of the most enormous size, capable of holding the accumulations of many months, notwithstanding the unanimous condemnation passed upon such places in every official report which has been made for the last five-and-twenty years.
4. The existence of dwelling-houses and sleeping apartments immediately over ashpits,—a state of things which the committee believe to be expressly forbidden by Act of Parliament.
5. The broken and uneven condition of the channels leading to the gratings in many of the yards, which prevents the flow of dirty water, &c., while the interstices between the cobbles form so many receptacles for refuse and decaying vegetable matter.
6. Open spaces between and around dwelling-houses, which are full of every possible kind of abomination, and are a disgrace to any civilised community.
7. The dangerous and dirty condition of the closed cellars under existing dwelling-houses.
8. Houses belonging to the Corporation, adjoining the pig-market, which are unfit for human habitation, in consequence of the damp and bad smells. These houses are let to a very low and disreputable class of tenants.
9. The disgraceful state of a large open space owned by the Corporation, where whole streets have been pulled down, and the vacant land allowed to become a depôt of every kind of filth, and a scene of immorality and debauchery both by day and night.

While the Leeds Social Improvement Society most earnestly invite the attention of the Corporation to these grave evils, they also venture to suggest some of the remedies which might, in their judgment, be immediately applied.

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In conclusion, the committee of the Leeds Social Improvement Society cannot but express the deep regret with which they, in common with many of their fellow-townsmen, have seen, that while the erection of large public buildings and the beautifying of the business parts of the town have been provided for, the poorer districts have been comparatively neglected; and they therefore respectfully, but strongly, urge upon the Council the duty of at once undertaking the less showy but far more necessary work of carrying out those sanitary improvements which are questions of life and death to thousands of the inhabitants of the borough."

Appended to the memorial there was a schedule of nuisances under each head referred to in the memorial.

What progress have the Town Council of Leeds made since we pointedly drew their attention to the disgusting state of their town in 1860? In a leading article of December 22nd, 1860, we said:—

"Leeds, speaking broadly, is a filthy and ill-contrived town. In some of the streets it is impossible for a person unaccustomed to impure air to remain for even a short time without becoming sick and ill. The stenches are overpowering, and the sights equally so. The paucity of private accommodation is such that in the side streets and open places no delicacy whatever is felt concerning compliance with the necessities of nature; so that even young persons verging into manhood and womanhood have become from habit totally indifferent to the sense of decency in this matter. In many of these streets there is no superficial drainage. If the street be concave, the rain and slops soak down the middle to some lower level; if convex, the liquid refuse runs to the side of the road, near the pavement, and not unfrequently overflows the latter. Some of the streets in the neighbourhood of Quarry-hill and the York-road are without any road pavement whatever. A week ago the cart-ruts in the roads were 9 in. deep, where the mud was solid enough to allow an impression in it being left; and in others the cart-road was a narrow channel of liquid mud. Add to this, that with a few exceptions the streets are narrow, tortuous, and badly lighted; and that the air is afflicted with factory smoke; and that side of the picture, it will be seen, is not an attractive one.

Yet Leeds is wealthy and flourishing, and has spent money liberally and nobly."

We then go on to show the immense sums expended on public buildings and works, and enter more fully into the insanitary state of the town, thus ending:—

"We have surely said enough to show that great changes are needed in Leeds, and we earnestly call on the right-thinking, intelligent, shrewd, and wealthy inhabitants of the place to *set about the work*.

Millionaires of Leeds! You *are* your brothers' keepers."

Fourteen years have passed since we had a good deal of Leeds dirt thrown upon us for thus venturing to say what we did then say; and now, in the face of a sanitary committee which was certainly appointed by the town council, and whose expenses have not been grudged, or, at least, which have increased from 4,000*l.* or 5,000*l.* a year, to 25,000*l.*, we find the right-thinking and more intelligent appealing to that same town-council to "set about the work," as if nothing had ever yet been done. And we now find the local press using just such strong language as we used fourteen years ago in speaking of the present state of things. The *Mercury* thus speaks:—

"Few among the inhabitants of Leeds will not be inclined to echo the sentiments of the memorial presented by an influential deputation to the town-council yesterday. For a considerable time past the public interest in the health of the borough has seemed to slumber, and the death-rate has remained at its usual level. . . . . Within easy reach of the centre of the town, almost within sight of the wayfarers in Briggate, there may be found dens so loathsome that it is impossible to give any detailed description of them in the columns of a newspaper. The passer-by who chances to penetrate into one of these horrible places finds himself in a courtyard, the broken pavement of which reeks with liquid and vegetable refuse, and with impurity of every kind. His eyes are pained by the filth which is everywhere to be seen around him, and his nostrils are assailed by stenches compared with which the smells of Cologne are positively sweet. If he inquires into the habits of those who dwell in these miserable spots; if, for instance, he looks for the conveniences without which life becomes intolerable, the results of his investigations must simply appal him. . . . . It is no exaggeration to say that all sense of cleanliness and of physical and moral decency must be destroyed among the residents in many of the places named in the schedule attached to the Social Improvement Society. . . But what is to be the remedy? There is, however, one point not alluded to in the memorial, which we cannot allow to pass unnoticed. This is, the duty of every Town Councillor to interest himself personally in this grave question of the public health. Yesterday's memorial was referred to the Sanitary Committee, and we fear that we do no injustice to the Town Council as a whole when we say that this is the course by means of which many important suggestions and many urgent complaints are removed from the sight of the public. We have given the Council credit for its desire to aid in the sanitary improvement of the town; but we are bound to say that this desire can never be realised unless the Councillors individually feel the full weight of their responsibility in this matter. The happiness, the health, the moral welfare, and the very lives of thousands of their fellow-townsmen depend upon their action in this matter."

Is the memorial of the Leeds Social Improvement Society to be quietly shelved? That is the question.

NEW BOARD SCHOOLS IN LIVERPOOL.

The new schools in Chatsworth-street, Liverpool, Gothic in style and carefully arranged, were opened on the 5th inst. They are to accommodate 1,000 children, and have cost about 8,500*l.* There are two infant schools for 200 each on the ground-floor, containing school-room for ninety-five, one class-room for forty-five advanced infants, and two infants' class-rooms for thirty each, fitted with galleries, and capable of being thrown together by movable screens. The senior boys' school for 120, with schoolroom for sixty and two class-rooms for thirty each, is also on the ground-floor. The remaining portion of the ground-floor is occupied by the committee and master's room and the caretaker's house. On the first floor of the Sophia-street wing are the junior schools for boys and girls, for 180 each, containing schoolroom for 120, with two class-rooms for thirty each, also fitted with movable lifting-screens. Each junior schoolroom is divisible into two by a lifting-screen. There is also a boys' drawing-room. In the Chatsworth-street wing is the senior girls' school for 120, with schoolroom for sixty and two class-rooms for thirty each. A mistress's room, with lavatory and water-closet, adjoins the senior girls' school, and also a girls' drawing-room. Lavatories and cloak-rooms distinct from each other are provided for each set of schools. There are three separate entrances to the playgrounds for infants, girls, and boys, and three main staircases. The angle of the building is carried up as a gable tower, and in this are the bell and a cast-iron tank holding 3,750 gallons, supplying the building by a 3-inch cast-iron main supply, fitted with hydrant and hose in case of fire. The rooms are lofty, very light, and well ventilated, the ground-floor being 14 ft. 6 in. high, and the first floor, 18 ft. high. The whole of the upper part of the sashes are hung on swivels. There are also about seventy ventilating-valves—the patent of Messrs. Lawson & Handsworth, of Halifax—in the outer walls, and each school and class-room has a separate extracting-flue from the centre of the ceiling, to remove at all times foul-air and gas. The buildings are heated by Mr. Harlow's patent boiler and hot-water pipes, and each room possesses in addition an open fireplace. Doors of communication between the separate schools, with pass-keys, are provided in each floor for ready supervision. The sound-proof lifting-screens, of which there are six in the building, are an invention of the architect, Mr. T. Mellard Reade, of Liverpool. They open the full width of the room, and half the height, and each is worked by a small winch and handle fitted in the side casings. The advantage of these screens over those commonly used is that they give, when lifted, a free and uninterrupted view. The wall dividing the two junior schools has also an opening in it, 8 ft. square, fitted with sound-proof doors, and by this means a magic-lantern screen can be fitted up in it, and the whole or one of the junior schools utilised for the audience, the magic-lantern being in the other schoolroom. Each main façade is faced with Lancashire shoddies, with Woolton stone-dressings. The whole of the joiners' work is pitch pine. The sole contractors were Messrs. Burroughs & Son, of Leycester-street, Liverpool. The clerk of the work was Mr. James Peers.

HASTINGS TOWN-HALL COMPETITION.

The plans for the new hall are causing considerable discussion in the Council. Last Friday quite a disturbance was created at the monthly meeting because Alderman Howell, as chairman of the Town-hall Committee, insisted upon making a statement as to the plans without giving previous notice. The dispute was on a point of order.

On Wednesday afternoon a special meeting was held to "consider" the designs and "select therefrom." The discussion lasted nearly an hour. Mr. Russell (builder) said that only fifteen or sixteen of the plans sent in stated that the design could be carried out for 12,000*l.* (including the foundation). Mr. Hill (Fowler & Hill, architects) declared that, having spent a good deal of time over the plans, he could not find one which could be carried out for the sum named. One or two very inferior designs might be carried out for a little more. He thought it would put the Council in a fair position if they employed a professional man to report on all the plans, as to how far they could be carried out for the stipulated amount; and he moved to that effect.

Mr. Alderman Ross moved an amendment that all plans which did not state they could be carried out for 10,000*l.* should be excluded from the competition. The two motions were discussed at length, and Mr. Alderman Howell, builder, mentioned that two public buildings which he had carried out in the borough had only cost 3d. to 4d. per cubic foot. Some of the plans were estimated as high as 9d. per foot.

Mr. Hill's motion to call in professional assistance to ascertain the cost of each plan, according to the prices mentioned by the competitors, was carried by a large majority. Mr. Hill next proposed that Messrs. Bateson & Hunt, quantity surveyors, of London, should be employed; but a proposal that Mr. Card (of Lewes), the county surveyor, who had been the arbitrator on the designs for the Aquarium, should be called in, met with general favour, and was unanimously adopted. The plans are not to be publicly exhibited until after the Council has come to a decision.

Sir,—It is to be regretted that the committee appointed to consider the thirty-five designs submitted for this building intend to observe such strict secrecy in their proceedings.

I think the experience of most of your readers will show that in competitions which have been fairly decided full publicity has been given to the proceedings connected with the adjudication; and as it appears to be the desire of the council in this case to do strict justice, I think it would be very useful that full opportunity should be at once given for the public inspection of the designs.

Still more desirable is it, however, that the advice of some eminent architect should be obtained in the matter, and that he should make his selection from the whole of the drawings sent in, and not, as sometimes has been the case, from a few previously chosen by the committee. This would give the best of all guarantees that the merits alone of the designs will determine the decision.

I believe all honourable competitors will agree with me in these views, and trust they will express them, that the committee may be induced to adopt a course which I feel confident is the only one that can ensure a satisfactory result.

A Competitor.

Sussex Iron.—An effort is being made, says the *West Sussex Gazette*, to restore to the county the ancient iron works that formerly abounded, but which disappeared on the use of pit coal in the North for iron-smelting. Impossible as it may seem, the revolution of time is operating to bring again the splendid deposits of iron in Sussex once more into notice. The iron deposits of the Wealden district are among the most extensive in the United Kingdom; and although, perhaps, not the richest in the per-centage of metal, are most valuable for their purity.

PURE AIR, PURE WATER, AND PURE SOIL.

On Monday last, Dr. Lyon Playfair, M.P., as President of the Health section of the Social Science Congress then sitting at Glasgow, delivered an address, a portion of which we print:—

Instead of allowing garbage to be freely oxidised or applying it to plant life, which is its natural destination, we dig holes close to our own doors, and cherish the foul matter in cesspools under conditions in which air cannot enter freely, and therefore the most favourable for injurious putrefaction. We forget the experience of our forefathers, that every cesspool has its own particular evil spirit residing within it, and we are surprised when the demon emerges, especially at night, and strikes down our loved ones with typhoid fever or other form of pestilence. Perhaps we go a step further in the hygiene of moderns, and do throw the foul matter into drains, which empty themselves into our once beautiful rivers, though in many cases they are still used as a beverage by people lower down in the stream. And when they remonstrate with us, we, surly wolves, growl at the poor innocent lambs lower down the stream, because they object to drink our abominations. This country once gloried in her beautiful rivers, but they are now mere open ditches, which pollute the districts through which they flow. Rivers in their normal state contain dissolved air sufficient to oxidise and destroy any accidental organic contaminations. This purifying power of air dissolved in water is essential, because no water, either in rivers or springs, could otherwise be pure. All sources of water are ultimately obtained from rain, and that is never pure, because it washes out organic impurities from the atmosphere. At the same time it carries down air in solution, so that it brings with the poison its natural antidote. The air-purifying process is, however, limited, and is altogether insufficient for streams polluted with town sewage and manufacturing refuse. In them you find no free oxygen, for that has been used up by the first small portion of impurities poured into the streams. Take, for instance, the beautiful Clyde, which ought to wash, but which fouls, this great city. I have analysed its waters miles above and miles below Glasgow. Long before it reaches the outskirts of the city it is already fouled, but after passing Broomielaw its condition is abominable. My friend Dr. Angus Smith has analysed the waters in its isthmus, and has found these pollutions even in the water of the beautiful sea-bathing resorts which are so much frequented by the upper classes of the city. The self-purifying powers of rivers, and even of the sea pouring in its tidal wave to dilute them, has no chance against the mass of abominations which large towns pour into them. But there is no longer an excuse for their doing so, for there are now various effective and well-matured processes for purifying drains before the water is ultimately discharged into the river. You cannot take out these abominations from the river itself, but you can readily prevent their being put in.

The only mode of restoring our great rivers from their present condition of open ditches to their natural purposes of watering and purifying the districts through which they flow is to prevent polluted matters being poured into them. Parliament must enact for this country the ancient commandment of the Egyptians, and say to all municipalities and manufacturers, "Thou shalt not pollute rivers." They have already said so to the latter in regard to air. When I was a student in Glasgow, I remember that the tall chimney of St. Rollox used to vomit forth noxious vapours, destroying vegetation and annoying the inhabitants. I had some small influence in persuading the late Lord Derby to pass an Act forbidding the pollution of air, and I am sure that the Messrs. Tennant and all other soda manufacturers are glad that we forced them to condense their acid fumes. Well, I say, with perfect deliberation, and after full study of the subject, that our knowledge in regard to the purification of drain waters, whether these contain town sewage or manufacturing refuse, is abundant and practical, and that all municipalities and manufacturers should now be prohibited by heavy penalties from fouling rivers. The compulsion would be a positive benefit to both. I may remind you that the present Prime Minister has lately told a deputation that he is greatly interested in this object. I hope that he is destined to do for water what his former friend and political chief, Lord Derby, did for one of the many impurities in air. Such a triumph of sanitary legislation would be worthy the great State doctor who has taken as his motto "Sanitas sanitatum omnia sanitas." If he achieves the purification of our rivers, I am sure that I can promise him from this Association, and, indeed, from all political parties in the State, an amount of applause which can best be expressed in the words, if not in the meaning, of Macbeth, when he says,—

> "Come, Sir, despatch; if thou couldst, doctor, cast
> The water of our land; find its disease,
> And purge it to a sound and pristine health,
> I would applaud thee to the very echo
> That should applaud again."

Mr. Disraeli has obviously thought much about subjects of public health, as evidenced in the wise observations of Mr. Phœbus in "Lothair." When, then, in his celebrated Manchester speech, he pledged himself that a Conservative Government would devote special attention to sanitary subjects, I believe that he expressed a deliberate and mature conviction. But, hitherto, probably from the force of circumstances, we have had promises only without their fulfilment. Surely another session cannot pass without a serious attempt at sanitary reform, when we recollect that the Prime Minister of England is the same orator who used the following remarkable words: "I think public attention ought to be concentrated on sanitary legislation; I cannot impress upon you too strongly my conviction of the importance of the Legislature and Society uniting together in favour of these important results. After all, the first consideration of a Minister should be the health of the people."

In the recent progress of hygiene nothing has been more clearly proved than that diseases are largely propagated through foul water, and recent investigations seem to point to the unpleasant circumstance that the germs of disease chiefly come from the excretæ of men as they enter into a state of putridity. Whole villages and streets in large towns have been stricken with disease by portions of human excretæ finding their way into water. Take the fever epidemic in London last year. A dairy company used the water of a well which had received the drainage of a person infected with fever, this drainage having percolated through the soil to the well and contaminated it in the usual manner in which well-water is so constantly fouled. Hundreds of persons, among whom were some of my relations, were stricken down by the milk polluted with this impure water. Take as another example the case which has happened while this address is passing through the press. A large public school, supported by national subscriptions, is thoroughly wrong in its hygienic arrangements. In its cisterns are foul waters, and close to its playgrounds are filthy cesspools. A most distinguished sanitarian, Dr. Anstie, visits it, and is lost to the world and to science during his inspection. Let us hope that the sacrifice of this precious life may lead to much sanitary improvement in our public schools. When the virus of disease enters the body in a state of solution, it is in a state most favourable for development. And as water is the common vehicle for removing impurities from dwellings, it becomes especially important to prevent waste water from entering into any source of water supply which is to be used for drinking or any other domestic purpose. But what is the condition of many towns, such as London itself? They are situated on rivers from which their water supply is derived, and it may be, and often is the case, that hundreds of thousands of persons pour in their abominations into the river before it is used for the town lower in the stream. London in this way has to drink all the foul drainage of about a million persons above it in the stream. The people cannot realise this nastiness, or they would not tolerate it for a day. Glasgow is happily situated in this respect, for it receives the pure and soft water of Loch Katrine. If London had such a source of supply, I believe that it would stand as a model in its death-rate to all the towns in the kingdom.

From what I have already said you will observe that the natural purifiers, on which we should rely in combating the pollution of our cities, are, a free supply of untainted air, unpolluted water, a porous soil, the pores of which are open, and not filled up by undrained waters; and, let me add, a healthy vegetation in the squares of our towns to help to purify their atmospheres, and to pour into them life-giving oxygen. It is the want of these conditions which makes both town and country dwellings unhealthy.

In ancient as well as in modern hygiene, the importance of an adequate ventilation of streets and houses was well known. It was also a matter of recognised experience that even efficient ventilation of these would be of little use unless the ground on which they were built was also ventilated,—that is, drained of underlying water,—so that the air might penetrate and circulate freely through the porous soil, in order to disinfect it from the continually accumulating *débris* of a crowded population. A few years since, while wandering amid the ruins of Cæsar's palace at Rome, I was stricken with the well-known fever of that city, and during my convalescence I had ample time to speculate on its causes. Those of you who have been in Rome will recollect how shallow now is the depth of the Tarpeian rock, and how deep down below the level of the surrounding streets are the floors of the forum and ancient temples and palaces. All that is above them is the organic and inorganic *débris* of thousands of years, which, when stirred up and coming in contact with oxygen, begins again to decay, and continually emits those exhalations which find their expression in the Roman fever. The same is the case on the site of ancient Jerusalem. I remember to have read somewhere, that when a shaft is sunk to the base of the Temple, the decaying matter of many past generations is set into action, and quickly destroys the wood with which the shaft is lined. Unless, therefore, the soil upon which a city is built is well drained and ventilated, the dwellings of the city cannot be healthy. It is not in fevers alone that the influence of the soil is apparent. Probably consumption itself, that great scourge of this country, is a chronic zymosis, or disease like many of our fevers, arising and communicable from like hygienic deficiencies. It is greatly mitigated by drying and ventilating the soil, as well as by ventilating the dwellings. After the sewerage of Salisbury had been made effective, the deaths from phthisis fell 49 per cent., in Ely they fell 47 per cent., in Rugby 43 per cent., and in Banbury 41 per cent. Dryness and elevation, and well-ventilated rooms, are powerful means to prevent, as they are to retard, consumption. In the last generation the average period of that sad disease was two years. Now, according to Dr. Williams, it is eight years. With pure air in the soil and in the dwelling, let us hope that the succeeding generation will point to it as a rare disease instead of as one of the most common maladies of this country.

Free ventilation around the houses, as well as within them, was enjoined by the ancients, but was as much neglected by them in practice as it has been by the moderns. Zeno ordered, after a long neglect, that houses in Constantinople should be 12 ft. apart all the way up. His orders were disobeyed, but fire in Constantinople has repeatedly done for it what fire has done in London. Ancient Rome, like modern Glasgow, became very bad with its closely-built houses, and at last they were ordered to be 5 ft. apart, and not more than nine stories high. Augustus limited their height to 70 ft., and Trajan to 60 ft. We do not know how many people lived in these houses, or how many congregated on an acre. But we do know some facts as regards our own population. Taken on an average all through England, the towns are less packed with houses and people than one could have anticipated. In primitive countries, where the savage lives on the produce of the chase, there is one inhabitant to each square mile. In the time of our Saxon ancestors in this country, there were five houses to each square mile, and probably about thirty inhabitants. Good but high-handed Queen Elizabeth was so horrified with the gigantic growth of London, although it then contained only 160,000 people, that she forbad the erection of any more buildings within three miles of London and Westminster, and she prohibited the division of a house into tenements for various families, "because [I quote her own words] great multitudes of poor people inhabiting small rooms, and those very poor, and such as must live by begging, or worse means, being therein heaped together and in a sort smothered, with many families of children and servants in one house or small tenement, it must needs follow that, if plague or sickness came amongst them, it would presently spread through the whole city and confines." Well, does this not sound like modern lecturing in the crowded city of Glasgow, where noble and gallant efforts, however, have recently been made to mitigate

the evil, and with a large promise of success? In Queen Elizabeth's time there were fifteen houses and eighty-three people to the square mile in the whole of England. Now there are seventy-three houses and 390 people. In all the English towns—excluding the rural districts—there are 713 inhabited houses, and 4,061 inhabitants to a square mile. That gives nearly an acre to each house containing six persons. You see, therefore, that the area of a town is far from being wholly occupied. But just compare that with large parts of Glasgow before the passing of its Improvement Act in 1866. Instead of six people to an acre, which is the urban average in England, there were districts with 600 people to the acre, 50,000 people being huddled together on eighty acres. In 1871, when the census was taken, only 5½ per cent. of all the families in Glasgow had more than four rooms, or, in other words, 94½ per cent. of the families had such insufficient accommodation that in no case had they more than four rooms, and in most cases fewer. Edinburgh has 78 per cent. with this scant accommodation, and 22 per cent. with the superior, and its rate of mortality is 25·7. If you now compare by a simple rule of three the relative density of population with the relative mortality of Edinburgh and Glasgow you will find that the increase of mortality in Glasgow nearly corresponds to its increased density in population.

The four towns of largest mortality in Scotland,—Paisley, Dundee, Glasgow, and Greenock,—have such dense populations that from 93 to 94 per cent. dwell in houses with four rooms and under. Notwithstanding the efforts made in Glasgow and Edinburgh to improve the house accommodation of the poor, the latter often defeat the intentions of those who build capacious houses, because they overcrowd them with lodgers. The working man does not spend the same proportional amount on rental that the middle-class man does, and is apt to try to decrease his weekly house payments by adding lodgers to the other inmates, who are already amply sufficient for the accommodation provided. If a room be adequate in its cubical contents of air for one person sleeping within it, yet it may be wholly inadequate for two or more persons. Although the amount of air required by an individual for respiration is comparatively small, yet he fouls so much air both by carbonic acid and organic exhalations that a large quantity of air must pass through an apartment to keep it sweet. If the air contain even one cubic foot of carbonic acid to 1,000 cubic feet of air it is vitiated air in an apartment. Now, to keep pure air in a room, from 2,000 to 3,000 cubic feet should be allowed to pass through a chamber every hour for each person sleeping or living in it. I need not trouble you with the data for this assertion. It is not a large enough allowance for hospitals or for rooms where there are exhalations of the sick. And unluckily the prevailing impression is that a far smaller amount of air suffices. In schools, for instance, often not one-fifth the amount of ventilation is given which is requisite for health.

Our rooms would become intolerable if it were not that there are natural, though insufficient, sources of ventilation beyond our control. The walls and mortar, though not transparent to light, are transparent to air, and through them is constantly passing an interchange of vitiated and pure air. Brick is, however, more porous to air than sandstone or limestone, and Scotch houses are not so easily ventilated by natural means as English houses. Indeed, were it not that the mortar which joins the stones happens to be readily permeable to air, stone houses would be in a bad condition. Of course it is obvious that the fewer persons there are in a house or room the greater becomes the superficial area of the building to each individual, and the more efficient the uncontrollable ventilation. Still air is of little use in ventilation, for the origin of the word *ventus*, wind, indicates that there must be air in motion. There are only two practical modes of producing this in our dwelling-rooms. We must either admit the external air when it is in motion, or we must produce movement by an elevation of temperature, such as fires, within the room. As the pernicious effect of draughts on susceptible persons depends on an abnormal cooling of the body, the task of the ventilator is to obtain efficient change of air without chilling one part of the body more than another. In modern hygiene nothing is more conclusively established than the fact that vitiated atmospheres in our dwellings and their surroundings are the most fruitful of all sources of disease. The exceptions to this statement are easily explained. Thus, in the wretched dwellings and filth-polluted premises in the islands of Scotland, you would expect to find a large rate of mortality, when in reality it is comparatively small. The reason is that during the day the inhabitants respire pure air, and during the night it circulates freely through their badly-constructed cabins, neutralising the foulness in which they are content to live. But in great cities like Glasgow there is no ozone-bearing air within miles of any part of it, and the houses are built of materials which render natural ventilation difficult. Then comes the packing up of the population into an incredibly small area, and the death-rate tells the woeful result. There is no subject to which I look with more interest than to the results which may be expected from the vigorous effort which the municipality of this city has made in recent years to mitigate this evil. The example is already telling on London, and I hope that the efforts of my friend, Mr. Kay-Shuttleworth, and others, will be crowned with success next session, and that we will see a large effort to improve the dwellings of the poor in the metropolis. Light and air are as necessary to the dwellers in cities as they are to the trees of a forest. There you see trees, pining for air and light, push their branches in the direction of every inlet. In their struggle for existence many are dwarfed and come to nothing; a few, stronger and more robust in constitution, push aside the weaker, and appropriate the essential conditions of life to themselves. If the forest be under skilled care, the forester, with his pruning-knife, cuts down the weak saplings, and leaves sufficient space for air and light to those of promising growth. But in an overcrowded city, grim Death with his scythe exercises little discrimination, and cuts down all those who come within its fell swoop. I have only alluded to the physical evils of overcrowding; but the moral evils are greater still. Although there is an excessive rate of mortality in overcrowded districts, there is no lessening of the population by such unhealthy agencies. A crowded and unhealthy district, with all its inevitable consequences of low morals and low intelligence,—where the condition of human beings is scarcely above that of animals,—where appetite and instinct occupy the place of higher feelings,—where the barest means of support encourage the most improvident and early marriages,—is not the place where we shall find a diminishing or even stationary population. For the early unions in such places are followed by early offspring, and although more than half that offspring may be swept away by disease during infancy, yet nearly a third of it will grow up in spite of all the surrounding evils, to follow in the steps of their parents, and in their turn to continue a race, ignorant, miserable, and immoral as themselves.

RITUALISM AS AN ART INFLUENCE.

Mr. Gladstone's remarkable utterances on the wide subject of "Ritualism," in the *Contemporary Review*, take us, in spite of the pressure of things present, fairly into the past, and into its then special mode of art action. It is most surely a subject of lasting and vital interest, and can never cease to be so, while human nature is constituted as it is, and while it has in it, as a constituent part and portion of it, a love, and liking, and craving, for a something more than a mere "*utility*." It is this want that is at the foundation of Ritualism, and the disturbing cause of so much. The subject in itself is well worth a little discussion whenever opportunity offers; and Mr. Gladstone's clever and learned paper on it, emboldens us to again glance at it in an artistic sense. It is full of right curious matter, interesting to artists and architects especially. It is in reality worth almost any amount of discussion, if only to understand through it, the use made by the older artists, draughtsmen, and sculptors, of the then prevailing "Ritual," whatever that might happen to have been, or in whatever style of art it might have been embodied.

It would be a very difficult thing indeed to find the best, or even the most primitive starting point of Ritualism, for the further back we go, the more often do we seem to meet with it. In the antique *religions* Ritualism was all in all. The appeal made to the religious faculty, and to the sensibilities of human nature, was made almost universally through it, and those doubtless to whom ordinary and [quiet motives could not touch, were compelled through it to join the crowds filling the old temples.

Where shall we begin?—where first find the mystery-loving crowds who, in the morning of the world, and long before its written history commenced, invented or fell into the idea of Ritualism? It is hard to answer this question with any degree of certainty, for, in spite of all our learned inquiries, we really know nothing, or little more than nothing, of the *early* history of the world, even in historic times. Where, indeed, history first commenced to record itself in any form is a mystery. The old Bible records, so loved and so venerable, are here and there without doubt illustrated by written scrolls, wall paintings, and sculptures; but then at the same time it is found that there are of these material records, not a few which reach farther back into the past, and sometimes tell of people, and languages, and doings, not to be found in the Hebrew records. Then, again, those nationalities which *are* noticed must have had a long prior existence, as had old Egypt, not in a state of savage barbarism, but must at the time they were spoken of have already *had* a "history," and a long one. Egypt in the days of the Patriarchs was a mighty empire, with all the apparatus of a settled and well-organised Government, and with a pompous ceremonial and court etiquette, and with a complicated and highly elaborated ritualistic religion. We might, therefore, well start with Egypt, and affirm that the old Egyptian invented Ritual,—at least, religious Ritual,—and was the first man in the world to make practical use of this then so useful element, — now so fertile an element of discord. But Egypt did not stand alone in the old world. There was, we are quite certain, India; far away, indeed, from Egypt, but in pretty nearly the like state of civilisation, or advance, or progress, or way of this life's work, or whatever other word or phrase which may best express the idea. A strange enough state of the world, hardly now-a-days to be realised, even in imagination. Egypt and India were alike in very many particulars. The walls of the temples of India are covered from base to roof with ritualistic records and pictures of religious ceremonial, quite as complicated and elaborate in detail as any to be found in the huge temples of Karnac and Luxor. Indeed, the ideas sought to be expressed were pretty much the same, but how differently were they worked out, each in its own special way. As to which was the eldest born, who can tell? Sometimes the one and sometimes the other finds its advocate. Certain it is that they did not *borrow*. Indian architecture and sculpture were one, and Egyptian architecture and sculpture were another; each one the growth of its own soil, and men. The "Ritual" of each as portrayed on its temples' walls, roofs, and columns, came equally—as one of the learned doctors of the Oriental Congress remarked—"out of the human heart" primitively. But how diverse and individualised in mode of representation. "Ritual" is everywhere, all the world over; and it might puzzle even Mr. Gladstone, with all his industry and varied knowledge, to find out a spot on the earth's surface, in the old days, wherein it was not. The subject grows as you look at it, for were there not other strange and isolated nations fully as "Ritualistic" as either of these? There was and yet is China, a vast empire, with a history stretching back into the misty past, so far back as to be beyond all indication of a beginning. It would seem always to have been as it now is,—a barbaric Ritualism and artistic formality ruling it well nigh absolutely. We need not to go on, for to do so would be to go round the world. It was the art faculty in human nature which did the work in ways sometimes so strange and striking. In architectures, sculptures, wall paintings, and on written rocks we yet see evidences of it; and our museums of art, what are they but storehouses of specimens and proofs of it? And how can we miss the Middle Ages, even in this momentary glance? They seem to have had concentrated in them all that could well be thought of and done in the way of Ritualism, in the very broadest possible sense and definition of the term. We in this age yet borrow and continue to dream of them, and when Mr. Gladstone is found so lovingly enthusiastic, or grows very angry about things as they are, it is the Middle Ages indeed that have supplied him, with no small liberality, with the subject matter. Human nature is very weak, that is certain; and it is impossible properly for the very strongest minded, and the most utilitarian, to do other-

wise than pause before and admire such a display of Middle Age "Ritualism" as may be seen in the processional triumphal progress of the Middle Age Emperor Maximilian! The subject is fertile and indeed endless, and might be pursued to almost any length, and we dare but to glance at it. In the old days —no matter where—Ritualism, or rather the idea of it, preceded, and indicated the way to, the material embodiment or expression of it. This it is which confuses not a little the whole subject matter, and, in reality, puzzles Mr. Gladstone. It makes the *definition* of the term sufficiently perplexing; so much so, indeed, that it all but destroys Mr. Gladstone's powers of word definition. What is Ritualism and Ritual? he asks. And he thus explains it:—It is, as now understood, "the unwise, undisciplined reaction from poverty, from coldness, from barrenness, from nakedness; it is overlaying purpose with adventitious and obstructive incumbrance; it is the caricature of the beautiful; it is the attempted substitution of the secondary for the primary aim." Such is broadly his definition of the term and idea, and a surprising one it is. It may serve to show how the very words in common use are made to bend and change as ideas retire, or advance—become new, or get to be obsolete. It is a text to ponder over, and is worth any amount of thoughtful consideration; and most certainly by artists, if by none else. We do but hint at a definition of the word in its broadest possible sense, that of the outward artistic expression of a mental conception; but that mental conception must necessarily be clearly defined, and indicated first. It is wonderful to think how simply things were done in old-fashioned days, with such simple-hearted directness, and openness of purpose. Now-a-days, as Mr. Gladstone puts it, the "purpose" is commonly last, sometimes, one had almost said, not at all. In the old days purpose was first—and that makes all the distinction between them.

It is not to be forgotten, and Mr. Gladstone, in his survey, has not forgotten to remind us of it, that "Ritualism," in its broadest sense, is not in any wise *confined* to religious or church matters; but widens itself even to common and every-day *costume*. Indeed, it is somewhat strange to find how *comprehensive* the term may become in skilful hands. The Church, whatever that may indicate to different minds, is and must be more or less "ritualistic" or expressive. Ritual surrounds Royalty itself everywhere. It must be good to be seeming and in order, and still more to be artistic and pleasant, and suggestive to eyesight. It is certainly,—looking, as Mr. Gladstone has suggested, at the ordinary costume worn both by men and women,—not excess of ritual observance in common life and affairs that is to be feared. It is rather, it is to be feared, a giving to more *fashion* and love of change what ought to be, as in the old Greek days, the result of artistic thought and expression. What a change would that be which should bring about really artistic and appropriate dress! not borrowed from the Orient, nor from the old Greek, nor from the Middle Ages; but from that all-fertile source of so much,—modern requirements in the first place, a growth out of bald utility, and the product really of artistic taste, and knowledge, and feeling for the beautiful and appropriate, and we might even add the "comfortable,"—no small element in it. This it is that is worth, well worth, some careful thinking over, and in time, may be, practical action. It is a much profounder subject than very many suppose, and no small human loss comes of its continued neglect.

And there is another point of no small interest and importance touched on by Mr. Gladstone, and which we could have heartily wished he had dwelt on. It is what we might perhaps name Ritualistic colour. Mr. Gladstone thinks that the "party of costume" is right. A costume for clergy is necessary, and is even a guarantee for conduct. It is as much connected with discipline and self-respect as a *uniform* for the army. It has gone through not a few strange changes, this "colour" Ritualism, and was consummated, he says, by the change in lay fashions,—a very singular one,—to a nearly exclusive use of *black*, or, in other words, the total absence of colour in costume. Would that he had pursued the curious subject a little further; for, what is the cause, we may ask in wonder, of the almost total supremacy in male costume of the all-prevailing black, or dingy brown, or dingy something, which, but a little way off, you cannot tell from black? Why should not female costume be as uniform as male costume in sombreness and blackness? Each changing season as it comes round witnesses some startling change in the bright colours of women's attire, from head to foot, from top to toe; and we have good cause sometimes to wonder at the lengths to which Dame Fashion goes with fashionable and court costume. Ritualism in costume! But in male attire it is all the reverse of this. Colour is never dreamed of. All is negative; and it is not even the *secondary*, and hardly the *tertiary*, colours that get the ghost of a chance. Why is this? Can any throw any light on this strange state of things? We could have wished that this perplexing phase of "Ritualism" had a little further light thrown upon it. It is well worthy of a little thought and inquiry, and Mr. Gladstone has done well in helping it on.

SAND.

The following is one of a series of scientific and practical examinations into the qualities and effects of the various materials which constitute cements and mortars made by engineers and others in France.

Sand is generally produced by the disintegration of rocks having a granitic base, or of calcareous compounds. It is also produced by the action of water on deposits, and on the *débris* which it carries off.

The primordial element of sand is quartz. Rocks composed of feldspar and mica cemented together by natural affinity produce many varieties; some are derived from gneiss, protognie, or talcose granite, sienites, &c., or are entirely calcareous; lastly, others are mixed with volcanic sand, but which do not possess any of the qualities of puzzolana.

Sand is designated as coarse, middling, fine, and very fine.

It is considered coarse when the grains have a diameter of 2 to 3 millimètres; that is to say, 2-25ths to 3-25ths of an inch; and it is called fine when the grains do not exceed 1 millimètre. That which exceeds the former diameter is called gravel.

Besides river and sea sand, we have that which is found away from water sources, which are known as fossil sands, of the plain, or quarry sand; but these must be distinguished from the true fossil sands, which are called *arènes* in France.

Fossil sand is far more irregular in the grain than either river or sea sand; it is far more gritty when the grains are strongly compressed between the fingers; quartz and granite dominate in their composition.

Near the sea are found large dunes or hills of shifting sand; the most extensive of these deposits in France are near Dunkirk. In the districts near the coast there are also extensive plains in which the sand is mixed with various proportions of earth, and which form the sterile wastes known as the Landes. In addition to the department which takes its name from them, landes exist also in Sologne and many parts of Brittany.

In the composition of mortar, sand forms the inert matter; it exercises no chemical action on the lime, the puzzolanic constituents, and the mortars with which it is mixed; its action is purely mechanical, and consists in the aggregation of the grains by the aid of the lime and cements, which perform the part of mordants, or active agents of cohesion: it follows that the sand of which the grains are the most angular and the angles the sharpest are preferable to those with rounded grains, or of which the asperities are less numerous.

The various kinds of sand should be harsh to the touch, gritty to the fingers, exempt from earthy matter, which causes disaggregation of the mortar by humidity; and for the same reason, though to a less degree, marly or clayey sand should be rejected.

In the case of sea sand, the first thing to be done is to get rid of the salt. The presence of salt, however, may be very useful in certain cases.

It is of great importance to take careful note of the various results obtained by the use of different kinds of sand found where works are being carried on; some kinds contribute powerfully to the cohesion of mortars, in combination with certain kinds of lime, while others are the causes of disintegration. Experiments of this kind cannot be too numerous or too carefully conducted.

M. Vicat instituted a series of experiments in order to determine the effect of the coarseness or fineness of eminently silicious sands, or the resistance of mortars, and arrived at the conclusion that for use with eminently hydraulic lime sands rank as follows:—1, fine grain; 2, sand with mixed grain and sharp angles; 3, coarse sand; while in the case of moderately hydraulic lime the order is reversed, the coarse standing first, the mixed second, and the fine grain last.

Results since obtained with other kinds of sand have fully borne out M. Vicat's conclusions.

The mixture of lime and sand is the more complete, the aggregation the more intimate, in proportion to the roughness of the grains; river sand, which has been a long time extracted, and left on the banks for many months, and which has its surfaces corroded by the action of natural agents, are beyond all question the best; but those of the quarries, which are best when their composition is very silicious, offer much the same advantages in practice.

Mortar made from quick-lime and coarse sand is the most durable; fine sand acts best with hydraulic limes. In the case of hydraulic mortars, the definite setting with middling-sized sand being fixed at 100, the proportion will descend as low as 50 with gravel, and even lower when it is very coarse.

Quartose and silicious sands are insensible to the most powerful compression. This quality has caused them to be sought for paving-work; and they are preferred before all others for foundations, and in all cases where great pressure has to be considered.

PROPOSED BUILDING ON STOCKWELL GREEN.

Within the last few weeks it has transpired that steps have been taken by a number of builders to appropriate Stockwell-green as building land, and the attempt has evoked strong opposition on the part of the inhabitants of Stockwell and Brixton, who urge that the Green, having long been regarded as one of the open spaces in the metropolis, it would be injurious to the health of the district to allow it now to be built upon. It is further objected to on the ground that the houses erected upon it would be uninhabitable, as they are proposed to be built in very close proximity to each other, back to back. The proposal has occupied the attention of the Lambeth Vestry, who are taking steps to prevent its being carried out; and at the meeting of the Metropolitan Board of Works last week, Mr. Fowler drew attention to the matter, contending that as it was one of the open spaces in the metropolis, the Board, as the conservators of such open spaces, were called upon to take immediate steps to prevent the Green, as one of the lungs of London, from being destroyed by the erection of buildings upon it. The matter was referred to the solicitor to the Board to report to the Works Committee what steps in the interest of the inhabitants could be taken.

THE NEW BRIDGE OVER THE METROPOLITAN RAILWAY AT FARRINGDON ROAD.

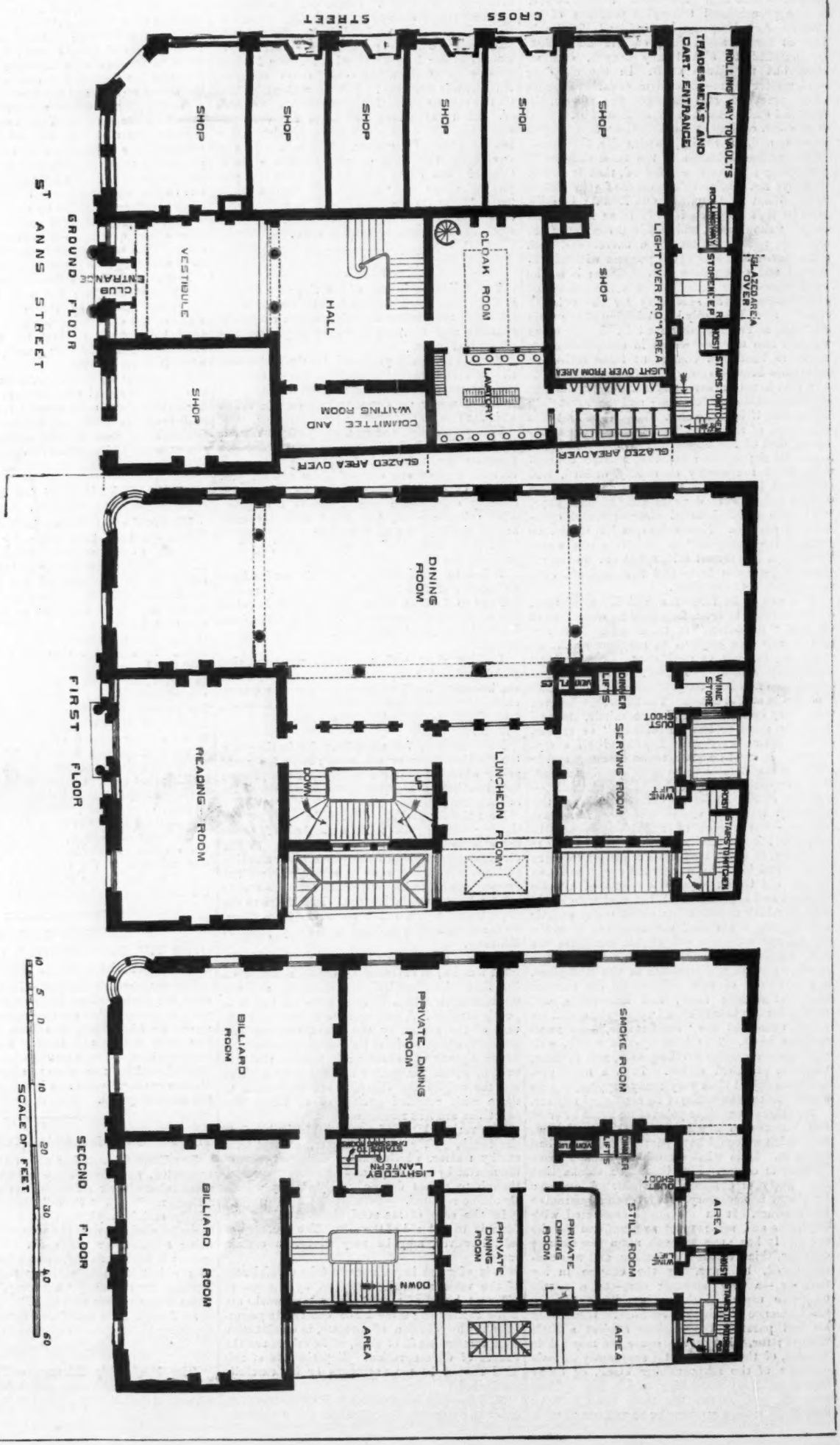
The contract for the new bridge to be carried over the Metropolitan Railway at Farringdon road, in constructing the new street from Oxford-street to Shoreditch, has been taken by the Darlaston Bridge and Roofing Company, South Staffordshire. The amount of the contract is 18,250*l*. The new street, after intersecting Hatton-garden, will cross Farringdon-road near Clerkenwell-green.

THE MARGATE DRAINAGE COMPETITION.

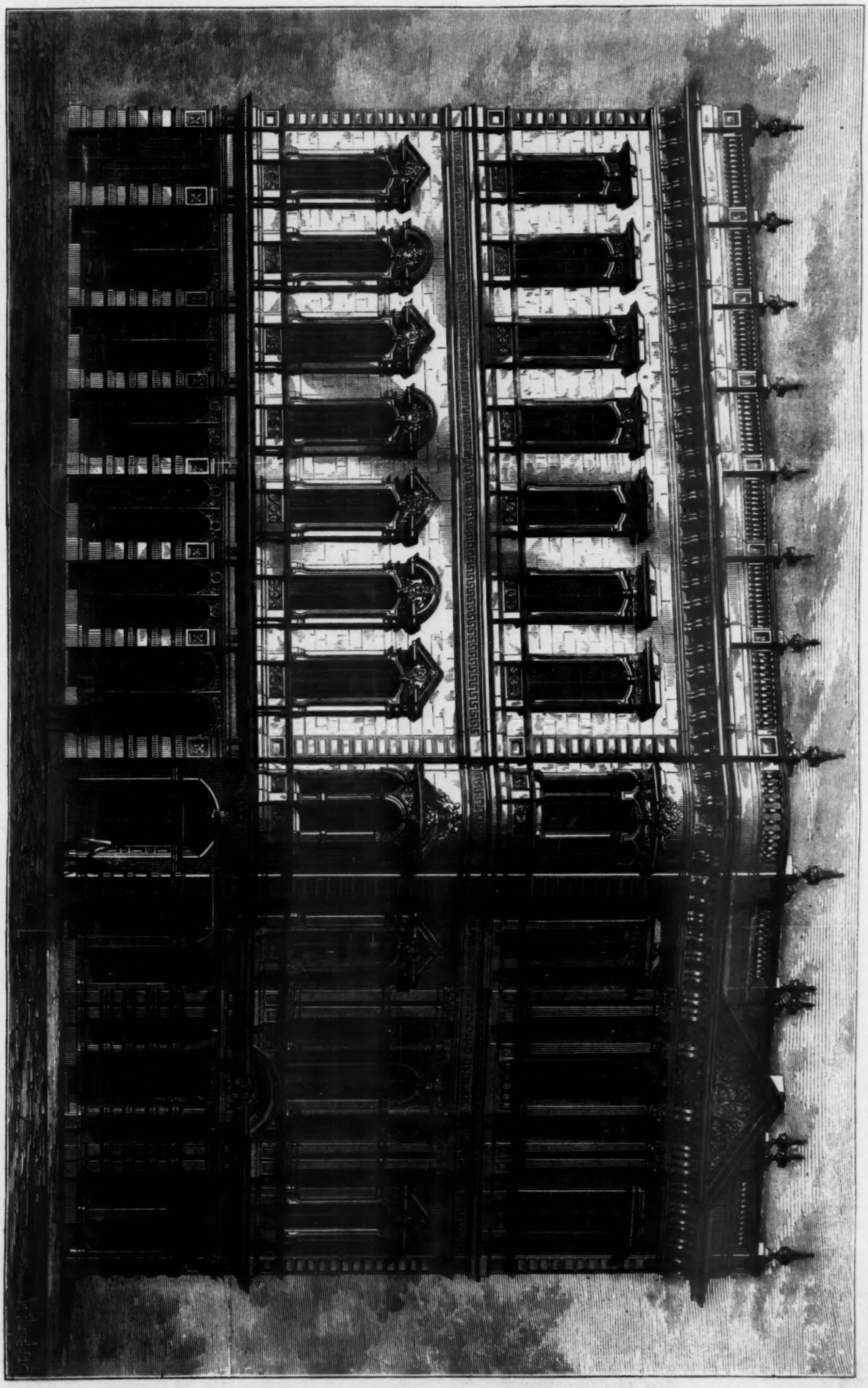
The Town Council has taken the course we suggested, and invited the authors of the two plans selected by Sir Joseph Bazalgette, marked "Economy" and "C. E." (neither of them wholly satisfactory), to submit in competition amended designs, with the view of one of them being selected for the work. The object of secrecy is now at an end, and we find it intimated at the last Council meeting that Mr. Lewis Angel is the author of "Economy," and Messrs. Gotto & Besley that of "C. E."

Sir Joseph Bazalgette's fee for examining and reporting on the plans was one hundred guineas.

The Kirkcaldy Masons.—The operative masons of Kirkcaldy, who struck work for weekly instead of fortnightly payments, have had their terms conceded them.



MANCHESTER CONSERVATIVE CLUB-HOUSE.—*Plans.*



MANCHESTER CONSERVATIVE CLUB-HOUSE.—Mr. Robert Walker and Messrs. Horton & Bridgford, Architects.

THE MANCHESTER CONSERVATIVE CLUB-HOUSE.

The Manchester Conservative Club-house, which is now in course of erection from the joint designs of Mr. Robert Walker and Messrs. Horton & Bridgford, occupies a site at the corner of St. Ann's-street and Cross-street, with an elevation towards the former of 68 ft. in length, and towards the latter of 106 ft., both faced with Yorkshire stone. The architecture is Italian in style. A bay window carried through the one and two pair floors will mark the junction of the St. Ann's-street and Cross-street façades. The club will occupy the whole of the one-pair floor, together with all the floors above; a portion also of the ground floor and basement.

The large dining-room is on the first floor. It will be a lofty room in three divisions, separated by detached columns, the end division being 25 ft. wide, and the central division 36 ft., and in length altogether about 98 ft. It is entered through a glazed ornamental screen direct from the principal staircase, and will occupy the whole length of the Cross-street frontage. In the rear and to the right of the principal staircase is the luncheon-room, with serving-room at the back; this serving-room is also in immediate communication with the dining-room. The library, which is entered from the staircase on the left, is lighted on two sides, and in extent will occupy the greater portion of St. Ann's-street front on this floor.

Two billiard-rooms on the second floor, each for two tables, and lighted from the top, with the addition of side-lights, will take up the whole length of the St. Ann's-street frontage and a portion of the return in Cross-street; on this floor, adjoining, is a large private dining-room, which can, if required, be used for a private billiard-room, with a smoke-room beyond. In the rear and over the luncheon-room are two private dining-rooms, with still and service-rooms at the back.

Over the principal staircase, on the three-pair floor, are the members' dressing-rooms, complete with bath-room, having private staircase in close communication with principal staircase. Closets and lavatory for the use of billiard-rooms, &c., are provided on a mezzanine floor in the rear, between the one and two pair floors. The steward's private rooms are on a mezzanine floor in the rear, between the two and three pair floors. Spacious and conveniently fitted-up lavatories and W.C.s, with cloak-room, are provided on the ground floor in direct communication with the principal staircase, as also a committee or waiting room.

The kitchen department is on the three-pair floor, occupying the whole of the floor over the private dining-room and smoke-room on the two-pair floor, and also the steward's private rooms in the rear. A cart and tradesmen's entrance is provided at the end of the Cross-street front, and also a receiving-room, with hoist and staircase to kitchen floors and basement. The flooring throughout will be fireproof. The space on the ground floor, towards the two fronts is arranged so that it can be let off for shops and offices, and the basement for vaults. The contract has been let to Messrs. Neill & Sons, of Manchester, for 21,473*l*.

OLD CHELSEA CHURCH.

For several weeks past, the Chelsea Vestrymen have been engaged upon the question of the restoration of the monument erected to the memory of Lord and Lady Dacre, in Chelsea Old Church.

At the meeting of the Committee of Works last Tuesday, Mr. J. Birnie Philip, sculptor, reported that the tomb could be cleansed for 14*l*., but it would cost 110*l*. to place it in proper repair.

Mr. Richard said they were under an obligation to the authorities of Emanuel Hospital to keep the tomb clean. He considered that if they did the repairs, the Vestry would establish a very burdensome precedent, and he suggested that the estimate should be submitted to the authorities of the hospital. He was anxious that the Vestry should do their part, and that was to cleanse it alone. Four years ago the governors of the hospital visited the tomb, and were satisfied.

Eventually it was resolved to act up to the opinion of Mr. Philip, and restore the tomb at the expense of 110*l*.

SOCIAL SCIENCE.

We have reported at some length a few of the most important addresses delivered at the Glasgow Congress, and would do so in other cases, but space fails. We take, however, in addition, a few disjointed utterances:—

Art-Teaching.

Lord Napier and Ettrick in the course of his address as president of the Education department said the National Art Training School commands a large area of selection and incomparable facilities for instruction. It would quickly form teachers in sufficient numbers and of unquestionable competency for the schools of art, if the schools would remunerate and retain the teachers. The question of maintenance is really the only difficulty. It is entirely in the hands of the community. The Government will do its part, but in conjunction with local effort. The art schools cannot be made efficient without a generous provision for accommodation, apparatus, and models, for permanent instructors, for occasional lecturers, for the exhibition of art objects of a high class, for the institution of bursaries to enable the best students to complete their education in the centres of artistic life. In all or many of these particulars our schools of art are meagrely provided. The benefactions of the rich, the co-operative subscriptions of the poor, are alike needed, and they would provoke a liberal response on the part of the Science and Art Department. I have observed that the schools of art in Scotland are in a stationary or retrogressive condition. Of the ten which exist and are reported on by the Department, six are in one respect or another declining, four only show signs of improvement. There is no doubt, I presume, of the impartiality with which the incentives of the Department are meted out. We must, therefore, refer the stagnation of art teaching in this country to other than official causes. The cause is simply this—that England was earlier in the field, that she possessed for a time some of those factitious advantages which were valuable once, but which are now comparatively inoperative. Scotland is still most renowned for works of utility and strength. She can supply the world with engines and with ships, but she cannot weave a yard of brocade, mould a statuette, or paint a china vase. In cotton fabrics and works of metal we do not go beyond mediocrity in taste, and the woollen manufactures which attain such an excellent quality have, except in the article of carpets, been rather the vehicle of traditional patterns than of true art design. If we compare the productions of those countries where technical education is most general with those countries where it is less practised, we do not find that the communities which are most taught work best. The facts may be admitted. Few who are familiar with South Kensington and Bethnal Green will deny that decorative fabrication was, in the seventeenth and eighteenth centuries, more careful, more delicate, more durable, more beautiful, and more inventive than the work which is done at present; and it is equally certain that the French far surpass in design and execution the Germans and Swiss, who make the greatest efforts for industrial training. But we must not admit that the modern forms can be set aside because former periods did without them. Former periods had their own methods, both of a coercive and stimulative character. The art school is the only substitute for the old forms of industrial training which the impatient spirit of this age would tolerate, and it is a valuable means toward the attainment here of that refined industrial culture which the French workman possesses in a conspicuous degree. It would, indeed, be lamentable if any time were lost, if any means were neglected, for the higher education of English labour; for there never was a period when so many influences conspired to give us confidence of success. I believe that I am not affected by national partiality when I assert that there is a vein of taste in the English mind superior to that which exists in other industrial communities, excepting France. The English mind is deficient in fertility of invention, in vivacity, in the conception of grace of movement; but it is not prone to what is fantastic, florid, laboured, and vulgar. I do not say that under the pressure of competition and the appetite for novelty there are not many examples of those vices in our productions; but they are not the natural growth of the soil. Compared with the productions of Germany, Belgium, and Switzerland, there is a temperate cast in the taste of England. Such was the character of our old manufactures, and it will never be difficult to restrain the English fancy within the bounds of harmony and reserve. With regard to executive aptitudes, it will scarcely be disputed that the average standard of English work remains superior in solidity and finish. Notwithstanding the relaxation of the old regulations of industrial training, notwithstanding the facilities of locomotion and emigration, and the temptations to indulgence which might have tended to unsettle the working classes and impair their powers of application, the individual Englishman still exercises in the most arduous departments of labour a sustained energy which is unrivalled among his Continental competitors. The human agent is undegenerate in vigour and susceptible of the highest culture. If we turn from the British workman to the market for British industry, we find that it combines in an unprecedented measure all the advantages which belong to patronage with those which belong to popular consumption. It is favourable alike to quality and quantity, it never was so critical and it never was so vast. It may scarcely be expected that British production in the category of art manufacture will obtain an increasing share of the market in those countries which are themselves industrial. Protective restriction and national predilection will give an advantage to the native producer, but the age is characterised by the rapid formation in vacant regions of civilised communities possessing great powers of purchase, and the love of luxury which attends the easy accumulation of wealth. These communities are invariably in a preponderant degree of English origin. The first relations of traffic are often with England; their tastes and habits must involve some preference for British commodities. It depends upon the morality and vigilance of our capitalists, on the self-control, intelligence, and culture of our artisans, whether we are to secure the markets of the future world, or to see the sceptre of production and commerce pass into other hands.

Trade Unionism.

Mr. A. Taylor Innes read a paper on "Trade Unionism: its Limits and its Future." There had, he said, been much discussion as to the origin and future of trade-unions. Their origin had been traced to the old crafts or guilds, and there was at least, in his opinion, a striking relation between the two. Both were founded on an artificial fact,—the division of labour,—and both were and proposed to be monopolies; but they differed not only in the fact that the old crafts were legal monopolies, while the modern societies were only voluntary, but in respect of the old guilds having embraced both masters and men. In olden times a master was skilled in his craft; now he was only a man of capital. Under the influence of this important change in their constitution the old associations crumbled away, and their modern representatives arose. Strictly speaking, he submitted there was no such thing as a trade-union of unskilled men. *Bonâ fide* unions were unions of men skilled in a particular branch of industry. It was a fact anticipated by theory and illustrated in practice, that excessive action on their part reacted on each particular trade, sending capital away to other countries or industries. So long as trade-unions adhered to the spirit in which they had hitherto professed to meet capital, so long any mischief their acting might be supposed to cause would be limited, local and temporary, and the system being one of self-acting checks, would be incapable of producing constitutional or revolutionary disturbance. In looking at the necessary limitations of the present system, it might occur to some that they hoped too much, and to others that they feared too much, from it; but, at any rate, it might suggest moderation on both sides. At the congress of labour held abroad in recent years, the contrast between British and foreign labour theories came out strongly, and it was important to lay stress on that at present. The whole toleration which trade-unions had received within the last century from law was founded upon the plea that they respected not only the rights of property but individual freedom, and a maintenance of this equipoise was sure to be insisted upon in future.

Mr. Barry said he was the representative of the International in London, and the determination of that body was that they would not cease their operations throughout Europe until they had abolished the employing class,—all privileged and distinct classes. He recognised the

equality of man as the only true basis of society, and the International were resolved to apply this to the economic conditions of life. Mr. Barry having alluded to the recommendation of the International to federalise all the trade-unions of the world,

Lord Houghton said that gentleman's statements would seem extravagant to most Englishmen; but they were not considered so on the Continent. Whatever position an Englishman took up with regard to the question of labour, there was this essential difference between his opinion and that of the foreign workman generally, that although he submitted often to certain things he never gave up or abnegated individual liberty. The whole question between a civilised country and a savage one was that in the former there was a working-class, which had accumulated certain wealth that came to be called capital, and was redistributed in the form of labour. He should like to know from the previous speaker at what point they were to stop this accumulation. It was very well to say that there was an infinite difference between a man who made 500*l.* and the Marquis of Westminster. Nevertheless, he (Lord Houghton) did not know where the line was to be drawn. He hoped to see the time come when working men would understand that all the capitalist could pretend to have was the wages of management, he being, in truth, the employed instead of the employer. If this were the case, it would be found that the whole question would turn upon two points—the one, what were the proper wages of management; the other, how far these wages should be allowed to continue, or whether it was advisable for the good of society that there should be any forcible stoppage—a redistribution. Give to the employer such wages as his enterprise, power of management, &c., deserved, and then the matter of wages came to be a question between them and the consumer. If working men could only be got to regard the capitalist as their manager, they would immediately come to the conclusion that the latter was or was not the proper medium between them and the consumer. He did not believe that if a body of workmen were fairly brought face to face with their employer, they would say that on the whole the latter got too large a share, or at any rate, if they did, such surplus or distribution would benefit the workmen much. The difference in wages depended upon the condition of trade, and if any one thought that by a possible human arrangement these economic conditions could be disturbed, he would find himself under a delusion. These conditions were not made by man, but by a law which it was perfectly impossible for any man, or any society, or any legislature, or any trade union to obviate.

England in Competition with Europe.

In the department representing Economy and Trade, Mr. John Matheson read a paper on the question, "How can this country best prepare itself to meet the increased competition arising from the spread of manufacturing industry in Europe?" He pointed out that although our trade was still paramount in extent, yet that of other countries was advancing at a greater rate of progress, especially in textile fabrics, upon which hitherto we had so largely depended. He showed that the extension of machinery over the whole area of civilisation, as well as other circumstances, had equalised wages, the price of living, and the *modus operandi* of production all over the world. He strongly objected to restrictions on labour such as were contained in the Factory Acts, and he asserted that England was alone in so limiting the labour of adults. In conclusion, he condemned strikes as having been productive of much mischief, and he urged that working men were quite mistaken in supposing that by such measures they could either permanently increase their rate of wages, or that the increase they had already gained was due to that source.

Mr. George Potter denied that the trade of the country was declining, and said that the bugbear of foreign competition was made far too much of by Professor Fawcett and others. Of late years our foreign trade had enormously increased. He disputed the allegation that trade-unions were designed to force strikes, and set labour against capital; on the contrary, they were only intended to secure that the rate of wages should not fall below that to which workmen were fairly entitled.

The Lord Provost of Glasgow spoke in support of the views of Mr. Matheson, and, in illustration of the evil of strikes, said it was a well-known fact that combinations of that kind had driven the ship-building trade of London from the Thames. (Loud cries of "No, no.")

Mr. G. Potter.—May I inform the Lord Provost that there never has been a strike in the ship-building trade on the Thames.

Mr. Lloyd Jones addressed the meeting on behalf of the working men, and asked what it was that the merchants and manufacturers desired. This country already possessed a trade infinitely beyond that of any other on earth, and did the employers wish to have labour so cheap that they would secure an absolute monopoly?

Mr. George Howell alluded to the small proportion of the recent increase in the price of coal which had been received by the working miners. In addition, hundreds of thousands of tons of slack accumulated at the pits had been sold by the masters for prices ranging from 3*s.* to 10*s.* a ton, and the men who had produced it received nothing.

Mr. Maclagan, M.P., admitted that the workmen had only got a small proportion of the increase in the price of coal; but it must be remembered that the increase was due to the scarcity of the article, and that this had been brought about by the systematic restrictions of the men in the matter of output.

Reclamation of Waste Lands.

Mr. Jackson, local secretary, read a paper sent by Mr. John Somerville, of Lochgilphead, on "The Reclamation of our Waste Lands, especially those of the Scottish Highlands, is a Moral Duty, and has become a Political Necessity." He spoke of the large number of acres in the United Kingdom capable of profitable reclamation, tens of thousands of which were situated in the Highlands, and which were abandoned to marsh and bog. Dairy and other produce were so dear and scarce in the Highlands, that they had to be imported at great cost, and labour was dear to the employer, and unremunerative to the labourer, from the excessive rains of the country, which cultivation would mitigate. In the midst of that undeveloped wealth, the people endured pinching want. With these home advantages, we imported during the last year cereals and breadstuffs to the extent of nearly forty millions sterling. He referred to the social condition of the Highlanders, and pointed out the physical, social, moral, and political advantages of cultivation, and sketched a scheme for carrying into effect these advantages through the means of a Joint Stock Land Company, suggesting that the estates bought should be divided into small, middle, and large farms, and re-sold, whereby he was convinced that the company would probably pay a moderate dividend.

Mr. C. Meenacshaya, landed proprietor in Madras and ex-judge, said that if the necessity for bringing waste land into cultivation was so great in a country like England, which was preeminently wealthy among the nations of Europe, where arts and manufactures and mining had made unequalled progress, and where cultivation wherever it was carried on, was carried to a high state of development, and where some might consider it a very questionable advantage to replace all the extensive deer forests and large shooting-grounds with verdant fields of corn, barley, and wheat, the necessity was increased a thousandfold when the case of India was considered. It was a very poor country—a country which was subject to periodical ravages of famine, where the people lived almost exclusively on the agricultural produce of the land; where manufactures and trades, if they existed at all, were in a state of comparative infancy. There were several millions of acres of land in India, so admirably suited for cultivation, that they would amply repay the labours of the cultivator. The reason for a large portion of that land lying in waste was to be found in the oppressive character of the land laws of India. In Southern India, extension of cultivation simply meant extension of pauperism. They had to pay two-thirds of the rental of the land, and often more, as a land-tax to the Government, and he asked them to consider whether it would show any great prudence to embark in such an enterprise. He earnestly requested the section that if any steps were to be taken in connexion with bringing the waste lands of this country into cultivation, measures should be taken for the reclamation of the extensive waste lands in India, which was part and parcel of the British Empire.

Mr. George Potter argued that the land which was presently devoted to game and deer forests should be made come-at-able for the sustenance of the people.

ENLARGEMENT OF ST. MICHAEL'S CHURCH, CHESTER-SQUARE.

St. Michael's Church, which stands at the west end of Chester-square, Pimlico, is at present undergoing an extensive enlargement. It already accommodates a congregation of 1,200 persons, and the extension will give space for an additional 400, thus providing room for a congregation of 1,600. The enlargement will be effected by extending the area of the church on the east side, from north to south, to the extent of 20 ft., involving the enclosure of the space within the churchyard, on each side of the chancel walls. The enlargement necessitates the taking down the whole of the chancel, together with the walls of the church on the north-east and south-east sides, and the preliminary portion of the work is now being carried out, the other portions of the church having in the meantime been partitioned off in order that the services may not be interfered with during the progress of the alterations. In addition to the structural extensions, a large new porch will be erected at the west end of the church.

The architect is Mr. Thomas Cundy, and the contractors are Messrs. Hill, Higgs, & Hill, the amount of their contract being 6,200*l.*, but this does not represent the entire outlay, which, including some intended repairs of the external walls, together with the rebuilding of the organ and internal decorations, is estimated at about 9,000*l.* The alterations are being carried out under the superintendence of Mr. J. D. Brown, as clerk of works. The stained-glass windows will be executed by Messrs. Clayton & Bell.

EXTENSION OF THE NORTH PIER AT BLACKPOOL.

Amongst the many improvements which are in succession being carried out at Blackpool, one of the most favourite Lancashire sea-side resorts, an important extension of the north pier is about to be effected. The intention is to extend the pier, and form it into an irregular octagon, with a diameter from north to south of 125 yards, and by increasing the area towards the jetty, and also landwards, a proportionate diameter will likewise be obtained. On the north side a pavilion, capable of accommodating 2,000 persons, will be erected, for the purposes of concerts and other entertainments; and on the south side a series of shops, lavatories, and wind screens, will be provided, and also a promenade, to be used on payment of a moderate charge. The estimated cost is 15,000*l.*

GOVERNMENT OF LONDON.

Lord Elcho has undertaken, at the request of the Metropolitan Municipal Association, to bring in a Bill, in the coming session of Parliament, for the reform of London government. It is sought, with a view to unity of action, and efficiency and economy in administration, to establish one general municipal government for the metropolis, such as Liverpool, Manchester, and other large towns already possess.

The following Memorial to be presented to Mr. Secretary Cross is in course of signature:—

"The respectful Memorial of the undersigned Ratepayers and others in the Metropolis showeth,—

That the present government of London is inadequate, and less municipal than the government of the smallest corporate town in the empire, and far less protective of the interests of the inhabitants in the control and supply of gas, water, and other important matters, than the government of Liverpool, Manchester, and the other large corporate towns.

That a portion of the metropolis known as the City has for centuries enjoyed municipal institutions, to the immense benefit of its citizens; and your Memorialists venture to urge that the most effective municipal government that could be established would be the extension of the powers and duties of the Corporation of the City of London over the metropolitan area.

That it was clearly intended in the establishment of wards without the City, as Farringdon Without and Bishopsgate Without, that such wards should extend over the increasing town area outside.

That Parliament has supplied the metropolis only with powers of parochial action, rendering general action on questions affecting the whole metropolis impossible, excepting in matters by special enactment intrusted to the Metropolitan Board.

Your Memorialists respectfully represent that it is desirable that all powers enjoyed by the City of London, and by Liverpool, Bradford, Bristol, Hull, and other large towns, should be conferred on the metropolis by such changes in its government as will give unity and greater powers, and cheaper and better government."

BAD BUILDING.

Sir,—I see you have quoted from the *Sheffield Independent* a communication having reference to the brick buildings in Sheffield, some of the oldest brick buildings not having a decayed brick—those of seventy or eighty years old, and in very exposed situations,—whilst in those of a more recent date the bricks are crumbling away. The bricks of the former were made by Glaves. He had the clay dug out and thrown up to be exposed to the frost of the winter months, and then in the spring made it into bricks, and his clay was not mixed with any other substance; whilst for the bricks in the buildings of more recent date the clay was dug out, mixed with large quantities of earth, and made into brick as soon as possible. Let a person visit one of these modern brick-yards and see bricks of this description spread out to dry: they look like earth itself, or rather dirt; they appear like the sun-dried bricks of Egypt held together by straw. Having said this of the bricks of modern date, I would notice the other peculiarities of such buildings, as everything in their erection is on a par with the bricks composed of such rubbish. The mortar is like dirt scraped out of the lanes in the immediate neighbourhood. (There is a good mortar used in Sheffield, composed of suitable quantities of lime and furnace cinders, both for building and plastering, made in a mortar-mill by grinding.) The plastering appears to have little lime and less hair, for large pieces fall off and expose the bare walls. I have seen a locality in which houses are run up by the street, halfway between Sheffield and Rotherham, in which the bricks are exposed to the extent of a square yard,—mind, these are new houses, occupied by their first tenants. The doors, from their being made of green wood, have so run in that I could put my hand between them and the doorstep. In one house, in quite an opposite direction, I have seen a cupboard skellowed in all directions 6 in. away from the plumb. The yards to some of these houses are not much wider than one of the rooms. There is an erection under one roof; at each gable end is a privy, and in the middle a midden the size of the two privies,—of which I shall say no more, except that those who planned such sahpits, when full, ought to be made to empty them. I could point out another locality in which houses have been built by the street in which the gable ends are only 5 in. thick,—a half a brick; and what makes one gable-end the more glaring is, there is a passage underneath the end house, and a brickyard disused at the front of the gable end. In Sheffield, it is said, "such houses hold one another up, and if they were built singly and alone they would tumble down." In another locality, I have seen the roof stripped of the slates,—from its blue slates, I presume,—from being nailed with iron, instead of copper nails. These houses have a shabby-genteel appearance; some are double, with bay windows; others nothing but single houses, with "*salt-box kitchens*," *i.e.*, a lean-to of but one story, that projects outwards about one or two yards. These contain a sink-stone and set-pot, with a back and also a middle door. I have seen some lots of property in a different locality in which each house has a small kitchen taken from a small room, the upper stories being over both: these kitchens contain a sink-stone, at the other side a set-pot, a middle and a back door. A stout man washing his face would have some difficulty not to rub his elbows against the sides of the walls, whilst his wife, in washing, when using the tub, has to stand in the doorway of the middle or back door. The houses have been so built as to conform to the Act of Parliament: these thus meet the requirements of the Act, as all houses in Sheffield must have the semblance of double houses. A good single house of the old type is far better, both for health and convenience, than such "improved dwellings for the working classes." These mushroom erections, of course, are run up by speculating builders,—men without capital, and little credit. As the inevitable consequence, their houses, as soon as "*finished*," are thrust into the market by some auctioneer. Many of these speculating builders are, to the rest of the trade, like the dog in the manger in one of Æsop's fables, who cannot live themselves, and therefore try to prevent others from living, and acquiring an honourable reputation. I could point out one of such men, who, in a great measure, has been the cause of land at 3*d.* a yard being raised to 1*s.*, as it did not signify to him what he was charged, as he well knew that not he, but other persons would be the sufferers,—that much-abused class, the bankrupt's creditors. I had a conversation about this man with a retired builder, who said he did pay a something to the pound; but he knew one worse (these were close neighbours). His creditors came upon him for payment: they thought they were sure of payment, having two lots of property on hand, the first just finished. They went to one man who they thought was a creditor, who coolly told them they could take the finished property by paying off the mortgage. The creditors, after some deliberation, came to the conclusion not to finish the other property. The builder applied to a manager of a public company for a situation, which he obtained, where he has been ever since, and he has never been troubled about his liabilities. Another speculating builder has failed no less than six times. The question naturally presents itself,—What will become of the erections run up by the jerry builders, and how long will they last with safety to those who may inhabit them in future years? They will soon wear out, like a man in a consumption; or, to use a Sheffield phrase, will have at some time to be pulled down to save their lives, and rebuilt afresh. Would you allow me to throw out the suggestion for those who buy new, or build property, to be careful as to what they purchase, and in the selection of whom they employ to build; in a word, to have dealings with none but men of character and good reputation? I will close by saying a word in favour of good bricks: it is that they are the most durable and the best protection against fire. This was seen in the great fire of Chicago; buildings of granite were shivered into splinters, and marble fronts were speedily turned into quicklime. It must have looked very singular to see large public buildings divested of their fronts, whilst their inside walls remained intact. T. C. Hinchcliffe.

NEW CHAPEL OF LUTON HOO PARK.

The chapel of Luton Hoo, the residence of Mr. Gerard Leigh, in Bedfordshire, has been opened.

The chapel opened occupies a portion of the north wing of the old mansion. The original chapel was destroyed by the fire which consumed Luton Hoo (then the property of the late Marquis of Bute), some thirty years ago, a chapel noted for its foreign woodwork, illustrated by Mr. H. Shaw. The rest of the house was restored in a sumptuous way some years ago by the present owner, but the north wing was only roofed over, and, though externally complete, was internally a mere vast barn, without flooring or divisions of any sort. This has now been reinstated, a considerable portion of the wing being converted into a chapel, and space being found for a large number of rooms in addition. One of the features of the Hoo was the corridor which led half through the length of the house; this has now been continued on to the north, paved with marbles, and at its northern end formed into a vestibule or ante-chapel to the chapel. The chapel, in internal dimensions, is about 25 ft. by 70 ft., and is terminated at the east end by a semicircular apse. Round the western half it is seated with stalls, with carved oak canopies. The floor, which is an arrangement of marble and tiles, rises by six steps to the altar. The apse is ascended and lined entirely with alabaster, and its domed vault is painted with a large figure of our Lord, on a throne surrounded by saints. Among those on His left are SS. Ethelreda, Agnes, Helen, and Katherine, whilst on his right are SS. Peter, Paul, Stephen, and John the Baptist. The whole of the windows are filled with stained glass, which, owing to the delicacy of the drawing, and the sparing use of colour, is some of the most successful work of Messrs. Clayton & Bell. The subjects are from the life of our Lord, and figures of the Apostles. In the ante-chapel windows are figures of the four doctors, Ambrose, Gregory, Jerome, and Augustine, and of Daniel, Ezekiel, Jeremiah, and Isaiah. The ceiling of the chapel is a moulded flat wooden ceiling, divided into panels, embellished with gold and colours, the subjects the heads of the Prophets and Apostles, and monograms being introduced in the principal panels. Over the ante-chapel is a gallery entered from the bedroom floor, fitted up, like the chapel, with stalls. Provision is made for the access of tenants [and servants from [the exterior by a staircase leading from the north courtyard to the ante-chapel. An organ, built by Mr. H. Jones, of Fulham-road, is placed in a recess or chamber on the north side of the chapel. The reredos is to be a sculptured crucifix, with St. Mary and St. John, on which Mr. T. Woolner, A.R.A., has now been for some time engaged. The whole of the works have been carried out from the designs of Mr. Street, R.A. The painted decorations are by Mr. Daniel Bell.

THE WORK DONE BY THE LONDON SCHOOL BOARD.

At the meeting in which the Board opened their new offices on the Victoria Embankment, Sir Charles Reed, the chairman, made a general statement as to the work done by the Board. He said:—

"We decided in 1871, upon the best evidence we had, that it was our duty to provide school accommodation for at least 112,000 children. We decided that 100,000 places should be provided at once. Before we entertained the question of building for our own convenience and comfort we had already arranged for the erection of 100 schools,—ninety-nine built by us and one being purchased, having been built by others,—providing accommodation for something like 80,000 children. I am now able to announce that sixty-five of those new schools have been opened, giving accommodation for 61,987; that thirty-five more schools are now being built to give accommodation for 26,736; and that the Board have taken steps to secure sites for thirty-four more schools with accommodation for 24,000; making a total up to this time arranged for by the Board of 134 schools with accommodation for 108,930 school places. It is due to our architect to say that thirty-seven of these schools have been planned by him. Twenty-eight schools, prior to Mr. Robson's appointment, were planned by outside architects. Our estimate in 1873 was 11*l.* per head for these schools; but by a statement recently presented by the chairman of the Works Committee, which I believe is fairly correct, it will be seen that the first sixty-three schools have not cost us more than 9*l.* 13*s.* 4*d.* At any rate, we may fairly say that the estimate of 1873 has not been exceeded; and including all extras and legal charges, the cost will not be more than 10*l.* per head. Now I think this must be satisfactory to the Board when they know that in provincial towns, like Bradford, the cost is double that which has been incurred by the School Board for London."

The average attendance at all efficient schools in London has been increased by the Board from 171,769 in 1871 to 256,391 in 1874. This gives an increase in all efficient schools in London,—Board schools and voluntary schools,—as follows: Increased accommodation about 100,682 places; increased school roll, 134,582; and increased average attendance, 86,534. This shows an advance upon the year 1871 of 50·37 per cent.

THE WALKER ART GALLERY, LIVERPOOL.

The foundation-stone of this new art-gallery, of which we gave a view, plan, and particulars in the *Builder* of 13th of June last, has now been laid by the Duke of Edinburgh. Mr. Sherlock and Mr. H. H. Vale are the architects. The cost will be 20,000*l.*,—a gift from the Mayor for the present year, Mr. Alderman Walker. The edifice will be of the Corinthian order of architecture. The centre of the front will face William Brown-street, where there is a portico of four fluted columns, with carved capitals, approached by a flight of twelve steps. The façade extends 70 ft. to the right and left of the portico, making a frontage of 180 ft. But we must refer to the full particulars already given on page 500 of the present volume.

THE WORKS AT THE TUNNEL UNDER THE MERSEY.

The preliminary operations in connexion with the construction of the proposed tunnel under the Mersey, between Liverpool and Birkenhead, are being carried forward by the driving of a test "heading" under the bed of the river between the Lancashire and Cheshire shores. On the Birkenhead side the shaft has already been sunk to the required depth of 98 ft., and the tunnel heading of 9 ft. in diameter has been driven to the extent of 100 yards in length. From what has already been effected, the engineers, Messrs. Brunlees & Fox, state that the peculiar kind of red sandstone, through which the tunnel will pass, is the best kind of rock for such a purpose; and that the "faults" are specially advantageous, being filled up with material that makes the rock more impervious. They add that this sandstone, at the depth of the Cheshire shaft which has been sunk, is the same solid and hard description of stone so frequently penetrated in the various engineering works in the town of Liverpool and the neigh-

bourhood, and is in every way adaptable for the successful formation of the tunnel. On the Liverpool side the shaft for the heading has been constructed near George's Dock, and on this side of the river a gradient of one in forty will take the tunnel very deep below the bed of the river, leaving at least 35 ft. of rock between the top of the passage and the bottom of the water. On the Cheshire side the middle of the river-bed will be reached with an incline of one in thirty-seven. Messrs. Brunlees & Fox consider that the heading can be driven in fifty-five weeks, and that the full-sized tunnel and all the works can be completed within two years. The tunnel itself under the river will be 1,300 yards in length, but the entire length of the railways in connexion with it on both sides of the river, will be a little more than three miles. The estimated cost of the heading is 50,000*l.*, and of the tunnel and railways in connexion with it 600,000*l.* The subscribers towards the 50,000*l.* for the heading are to have it returned when that portion of the work has been accomplished, and, in addition, are to receive a similar sum in paid-up shares in the company.

CONSECRATION OF THE CATHEDRAL OF ST. ANDREW, INVERNESS.

The cathedral of St. Andrew, at Inverness, in connexion with the Scottish Episcopal Church, has been consecrated with great ceremony. The foundation-stone of this cathedral was laid in 1866, by the late Archbishop Longley, Primate of All England. It was opened for public worship on the 1st of September, 1867, by the late Bishop Wilberforce, all the Scottish bishops taking part in the proceedings. A debt of 6,000*l.* then existed on the building, and thus the ceremony of consecration could not be performed. Within five years this debt has been wiped off. The total cost has been about 20,000*l.*, and to this has to be added about 5,000*l.*, value of gifts to the church. This cathedral at Inverness is, as yet, the only building of the kind connected with the Scottish Episcopal Church, but a second, and on a much grander scale—that of St. Mary's—is, as our readers know, at present in course of erection at Edinburgh.

EXHIBITION OF SANITARY APPLIANCES, GLASGOW CONGRESS.

The report in our last number of proceedings at the opening of this Exhibition (p. 823) was printed without the revision of the editor, and an expression was used with reference to the observations made by him on the occasion, out of place in these pages.

The reporter misunderstood Mr. Chadwick's remark with regard to the houses in Shaftesbury Park. So far from saying that they "had been put up at one-third less cost than on the ordinary system," he urged that if they had been built of concrete, instead of in the ordinary way they are, one-third of the cost might have been saved and the houses would have been drier.

There were 170 exhibitors, and many of the objects sent were of an interesting and useful character. The collection was visited by a number of persons, but scarcely to the extent it deserved. The site was a little too far from the centre of the city, and the approach to the building was atrocious.

STATISTICS OF RAILWAY EXPENDITURE.

An interesting statistical statement of the total capital expended on railways in works up to June, 1874, and also the capital expended during the past half-year, has just been published, from which it appears that the aggregate capital expended on the twenty-two leading railways mentioned below, to June last, amounted in round numbers to nearly 470,000,000*l.*, and that the total outlay during the last half-year in works on the same railways was 8,539,243*l.* Thus the total capital expended on the Bristol and Exeter line to June last was 5,211,763*l.*, and during the last half-year, 56,876*l.*; on the Caledonian line during the same periods respectively, 25,278,713*l.*, and 556,324*l.*; Furness, 4,264,645*l.*, and 208,112*l.*; Glasgow and South-Western, 8,420,954*l.*, and 221,569*l.*; Great Eastern, 28,699,002*l.*, and 137,794*l.*; Great Northern, 22,502,563*l.*; Gt. Western, 49,892,251*l.*, and 576,626*l.*; Lancashire and Yorkshire, 26,208,933*l.*, and 657,282*l.*; London, Brighton, and South Coast, 18,155,003*l.*, and 177,673*l.*; London, Chatham, and Dover, 19,973,091*l.*, and 472,219*l.*; London and North-Western, 61,588,928*l.*, and 977,653*l.*; London and South-Western, 18,362,473*l.*, and 274,526*l.*; Manchester, Sheffield, and Lincolnshire, 15,609,556*l.*, and 374,680*l.*; Metropolitan, 7,862,631*l.*, and 76,114*l.*; Metropolitan District, 5,405,225*l.*; Midland, 47,763,523*l.*, and 1,513,863*l.*; North British, 23,814,218*l.*, and 210,505*l.*; North-Eastern, 48,130,468*l.*, and 966,560*l.*; North London, 3,768,389*l.*, and 22,890*l.*; North Staffordshire, 7,394,111*l.*, and 114,569*l.*; South Devon, 3,645,846*l.*, and 50,118*l.*; and South-Eastern, 19,063,322*l.*, and 73,895*l.* The disparity in the cost of construction of some of the several lines is also noteworthy. For example, the outlay of the London and North-Western Company in works to June last, with a mileage of 1,579¾, was 61,588,928*l.*; whereas the Great Western, with 1,510 miles, or only 68 miles less, was 49,892,251*l.*; the London and Brighton, with 359 miles, the London and South-Western, with 669 miles, and the South-Eastern, with 323¾ miles, cost each from 18,000,000*l.* to 19,000,000*l.*, whilst the London, Chatham, and Dover, with only 127¾ miles, cost 19,973,091*l.*, or about 157,000*l.* per mile, as against only about 60,000*l.*, the average cost per mile of the London and Brighton and the South-Eastern lines. The construction of the Metropolitan, 12¼ miles in length, cost upwards of 655,000*l.* per mile, and that of the Metropolitan District, 7¼ miles, about 770,000*l.* per mile.

CHURCH OF ST. NICHOLAS, LIVERPOOL.

Sir,—In the *Builder* of last week there is a paragraph headed "Clearing away at Liverpool," in which reference is made to a letter by Mr. Samuel Huggins, deprecating the removal of St. Nicholas Church. I think he has found what is usually termed "a mare's nest." I have never heard of such a scheme, which if it had been entertained by any of the public bodies of the town, I certainly should have done. It is possible that some hare-brained projector may have suggested it, but it needed no protest against it. The *vis inertiæ* itself, to say nothing of the municipal impecuniosity, would be a sufficient safeguard. I am not aware of any possible reason, either æsthetically or for public convenience, which would require the removal of the structure. I do not think it is in any greater danger of removal than St. Paul's Cathedral.

The tower and lantern were not erected eighty years ago as the paragraph states, but fifty-five years ago, in 1819. The lantern, which is a very beautiful design, is not an imitation of that at Newcastle. The "motif" may be the same, but the working of it out and the proportions are different.

J. A. Picton.

SANITARY MATTERS IN THE COUNTRY.

Biggleswade.—The reports, to the Rural Sanitary Authority, of Dr. Prior the Medical Officer of Health, and of Mr. D. Miller, the Inspector of Nuisances, show the usual bad state of things, and superabundance of nuisances which must render the duties of these officers most onerous and troublesome. Typhoid fever had broken out in the village of Biggleswade, and the medical officer reports upon that. It was clear, however, that the first case came from Nottingham, with a tramp, but it soon attacked others in overcrowded and otherwise defective dwellings, where six cases are reported on. The inspector of nuisances reports that he has served sixty-six notices requiring abatement of existing nuisances in the parishes of Biggleswade, Potton, Sandy, Shefford, Clifton, Blanham, Arlesley, and Everton.

Carlisle.—Fever has for some time been epidemic here, and there seems to be no abatement. Sanitary meetings of residents have been called by Dr. Elliot, and held in the Town-hall. Dr. Elliot thought that if the town was inspected by members of the corporation and inhabitants, dividing themselves into sections, it would conduce to the general health. This is being done with good will, and it is to be hoped benefit will follow from it. Many of the local clergy were present. Complaint was made that no proper public steps had been taken till now in dealing with the disease. 130 persons had died of it already.

Preston.—Some revolting disclosures, respecting the bad sanitary condition of the lower class of dwellings in the town of Preston, were lately made during the hearing of two cases before the borough magistrates. Steps are being taken to make the houses tenantable, and the cases meantime have been adjourned.

Stone.—From Dr. Ballard's report on the sanitary condition of Eccleshall and Trentham, it appears that the immediate occasion of his inquiry was a record in the quarterly report of the Registrar-General of four deaths from fever in Eccleshall sub-district. Dr. Ballard learned that a serious outbreak of enteric fever had taken place at the village of Barlaston in the Trentham district, and he therefore extended his inquiry to that place. In the village of Mill Meece, at one of a pair of old stone-built houses, several cases occurred. There was no proper drainage of these houses, leading to the pollution of the well water, and a privy used by the people of both houses was in a foul state and badly constructed. The whole of the village was practically undrained, and there were accumulations of filth and offensive sewage close to the dwellings. The privy accommodation was generally unwholesome, and in one instance consisted merely of a hole dug in the earth, with an imperfect wooden shed covering it. At Chebsey, where another of the deaths occurred, the disease did not spread; but on a former occasion some years ago, when enteric fever was introduced into the village, it spread very extensively. Since that time nothing had been done to improve generally its sanitary condition. Parts of the village were entirely unprovided with any means of drainage, and in other parts the drainage provided was of a very imperfect and inefficient character. The village abounded in nuisances from sewage matters and in excrement nuisances. At Barlaston he found that enteric fever had occurred in five houses between October and the time of his visit. It was most probable that the fever spread in consequence of the common use of a well in very close proximity to a cesspool receiving the domestic slops from all the houses, as the well could scarcely have failed to become polluted. The privies were also badly constructed and unwholesome from accumulations of excrement in and about them. The drainage of the part of the village about Barlaston-green was very inefficient. The Rural Sanitary Authority should immediately put into operation the powers it possesses to procure the proper sewering and drainage of the villages of Mill Meece, Chebsey, and Barlaston, and the disposal of their sewage in such a manner that it shall not be a nuisance. In all these villages inquiries of a detailed character should be made by the medical officers of health into the wholesomeness of the existing privy accommodation, and where necessary privies should be reconstructed so as to render them wholesome. In his opinion earth-closets might in most cases, if not in all, be judiciously substituted for the arrangements now in use. The medical officers of health should also inquire into the water supplies of these villages, and where there may be found to be any danger of the pollution of the wells from soakage into them of slops, liquids, or excremental matters proper steps should be taken to obviate the source of danger to health.

Cirencester.—From a report of the medical officer of health, Dr. Bond, to the Urban Sanitary Authority, on the sanitary condition of the town, it appears that the chief requirement of Cirencester is a supply of good water. The supply from the wells is defective, in quality especially. The efficiency of the sewers is more than doubtful, and in some places there are no sewers. An extended system of sewerage is necessary, as well as plenty of water, for flushing. Irrigation is suggested. A more complete system of "dry conservancy" is considered quite feasible, however, in the meantime; but there is no difficulty as to the outfall in Cirencester.

Insanitary Condition of Sedgley.—A special meeting of the Upper Sedgley Local Board of Health has been held to consider the steps to be taken to stamp out the present visitation of typhoid fever in the district. Mr. Homer presided, and there was a full attendance of members. The chairman, in opening the proceedings, said, the unenviable notoriety which the Board had attained, together with the lamentable and calamitous results of the factious and parsimonious spirit which had actuated them, must have been a source of regret to all. Of water, there was a totally inadequate supply. He had seen from four to twenty houses without a single supply of water, and the cruel shifts the inhabitants of those houses were put to, had ap-

doubtedly served to induce the fearful outbreak of fever which was now raging. Even the water available was for the most part impure, in consequence of there being a total absence of sewers or drains, and closets running over in the immediate vicinity of the wells. Dr. Ballenden, Mr. Walker, and the Rev. J. J. Booker, had informed him that the outbreak of fever was in a great measure attributable to the inadequacy of the water supply, and the impurity of that which was obtainable. As to the removal of nuisances, in many instances the owners or occupiers of property were unable to dispose of their night-soil; and again, disputes took place amongst tenants as to whose turn it was to empty the middens, and thus criminal delay was occasioned. People could not wonder that men living in these places flew to drink and the public-house. In Robert-street there were twenty houses with one dilapidated closet, no water, and four visitations of fever. If the Government inspector were to visit that district in its present condition, the first order issued would be for a comprehensive system of deep sewers, which would simply mean bankruptcy for them. Time would show who were the true and who the false economists. After several gentlemen had spoken, it was resolved unanimously, "that the inspector do commence forthwith to examine all the known places where nuisances exist, that are the cause of this calamity, and exercise the powers vested in the Board by the Nuisances Removal and the Sanitary Acts, without delay." It was pointed out how necessary it was that they should have the assistance of a medical officer, and that Dr. Ballenden should be asked to accept the post till the next meeting of the Board, when, no doubt, a medical officer would be appointed. Dr. Ballenden said he should be very happy to assist the sanitary committee, who then agreed to commence their inspection forthwith.

LEICESTER LECTURE-HALL AND SCHOOL OF ART COMPETITION.

It was resolved by the Town Council, on the 29th ult., to carry out the plan submitted by Messrs. Shenton & Baker, of Leicester, subject to a suitable tender being obtained for the stipulated sum of 5,300*l.*

To Mr. Hames, of Woburn-place, London, was awarded the second premium, of 20*l.* Five sets of drawings were sent in.

TRAFALGAR SQUARE.

Sir,—There being some prospect of a change in the *stony* aspect of the most central of London squares, I venture to protest against the proposal of planting shrubs round the Nelson column. This would hide its proportions, and is every way objectionable. If the lions require some protection from rough usage, a moat filled with water would be more suitable, and might be supplied from the waste of the fountains. With regard to the square itself, no change will be satisfactory that does not provide a grand flight of steps opposite the portico of the National Gallery, and so dispense with the present double flights at the corners.

I should occupy too much space were I to describe at length all that could be done towards making the square equal to its important place amongst open spaces. Trees, fountains, terraces, grass, flowers, shrubs, and above all statuary are required to finish suitably what ought to be made the finest *place* in London. All this would cost much money, but after all money may be the least of the difficulties. Surely something very much better than Leicester-square is possible. J. W.

THE TRAMWAY COMPANIES, AND THE PAVING OF THOROUGHFARES.

Sir,—From the notice on this subject in your paper, your readers will have learnt that the Newington Vestry have failed in their attempt to get wooden blocks substituted for stone along the new lines of the London Tramways Company.

No system of setting tram-rails in asphalte has yet been found successful financially, as the asphalte against the rails is, throughout its entire length and breadth, rigid and unyielding, and therefore liable to constant fracture at its edges by the constant movement of the rails under the weight of the cars.

Dwellers on the various tramway routes, made and projected, may thus conclude that their only choice of a pavement lies between noisy granite and dirty macadam; but I am able to point to a successful alternative for some time now in use at Clapham.

There, vestry, tramway company, and paving contractors, were at loggerheads for a long time, each naturally objecting to be saddled with the cost of the constant repairs to the asphalte through which the tram-cars ran.

A compromise was at length arrived at, and last Christmas a composite pavement was laid, which seems to have met all requirements most satisfactorily.

It consists of a single set of granite cubes laid lengthways along both sides of each rail, and occupying a width of 4 in. on each side of it. The whole remainder of the road between the cubes is laid in asphalte as before, and this simple modification of the previous paving appears to have contented all parties. The Vestry and the public get the benefit of the clean and noiseless pavement. The contractors are spared the inconvenience of doing constant small repairs, and the Tramway Company are saved from all annoyance on the subject.

As this plan may be easily adopted elsewhere, I venture to bring it to the attention of your readers.

E. J. H.

PIPE LAYING.

Sir,—Permit me, through the medium of your valuable columns, to ask the following question:—

Is it practicable to lay stoneware glazed socket-pipes under water without any protection, with the exception of that afforded by the natural bed of the water?

Clerk of Works.

"JERRY BUILDINGS."

At the Salford Borough Court, Fletcher Armstrong and Peter Dow, of Lower Broughton, were summoned before the Mayor and Mr. J. F. Mart, for constructing ten dwelling-houses, the floors of which had six joists 7 in. by 2 in., instead of 7 in. by 2½, which is the width prescribed by the Salford Corporation.

Mr. Wheatly, Deputy Town-clerk, prosecuted on behalf of the corporation, under the 22nd Section of the Salford Improvement Act, 1871. The defendants are builders of a block of property consisting of ten houses called "Industrial Dwellings" situated in Pendleton-street, Charlestown, Pendleton.

The facts of the case were proved by Mr. Fowler, borough engineer, and Mr. Young, the building inspector, of Salford.

Mr. Fletcher Armstrong, one of the defendants, appeared, and said that he and his partners were merely the contractors. Mr. Lord, he said, was the architect of the property; it belonged to a gentleman named Caldecott. The specifications indicated 7 in. by 2 in., and it was by these they had worked. On receiving a notice from the surveyor, they sent to the architect's office, but he was out of town and did not come home until last week. They were perfectly aware of the bye-laws, because they had built a large quantity of property of their own, and they never did anything of the kind on their own property. We are only the contractors for the work, and we have been working under the instructions of the architect.

Mr. Mart (to the Deputy Town-clerk): Do you press for heavy damages?

Mr. Wheatly: Yes, because the defendants knew the law and transgressed it. We have now 400 or 500 dwelling-houses being constructed within the borough. There were 2,000 dwellings built in the borough during the past year, and this case shows how the dwellings of the poorer classes are being constructed.

Mr. Mart: You will be fined 10*l.*, but if any other case of this kind comes before us the fine will be much heavier.

ASPHALTE CLEANSING COMPETITION.

Sir,—In the latter part of last year an advertisement appeared in your columns, which emanated from an amalgamated committee of the several asphalte companies of London, termed the Central Asphalte Committee, offering a premium of fifty guineas for the best idea for cleansing the London asphalte, the corporation having, through Mr. Hayward, condemned the pavings in their present state as the most dangerous and least suitable for London traffic. There were, I understand, between fifty and sixty competitors, and among the contributions some beautifully-prepared designs, and others being nicely thought out and constructed models. Some thirty or so of them were selected by the secretary, and placed at the Society of Arts, who kindly gave their rooms for their exhibition. Since that time nothing has been heard of the matter, except what could be gathered from the clerk's official letters in answer to mine; and on calling, I learn that the committee is dissolved, the secretary, of course dismissed, or drafted back to whence he came, and now twelve months from the time the matter first cropped up, we do not seem any nearer to a settlement than we did in March last.

I hope you will be able to find room for this letter, as in justice to myself and other competitors, it is surely time that the thing was decided; for apart from the waste of time, money, &c., I, at least, should like my contributions back again intact, which I think is rather improbable after they have been taken to the Adelphi and back to the City, and now I suppose kicking about in the offices of the Val de Travers Company. Competitor.

DAMPNESS IN STRONG ROOMS.

Sir,—I have no doubt the dampness in the strong room, about which your correspondent "C." writes, is caused by the moisture suspended in the atmosphere being condensed by contact with the cold walls, floor, and ceiling of the strong room. The atmosphere being 84° or 90° would, of course, be capable of suspending a great quantity of moisture. If the dampness arises from this cause ventilation would not remove it. The only way of preventing it seems to me to be either to dry the atmosphere, warm the walls, ceiling, and floor, or else to cover them with boarding or felt, or with boarding covered with felt or baize, and so prevent the atmosphere coming into contact with the cold interior. It may be that the strong room has never been thoroughly dried since building: if so, this would increase the dampness. If the dampness is caused by the state of the atmosphere it would be worse when the atmosphere is full of moisture, and no doubt would be at times quite dry. When "C." cures it, it would be interesting to know by what means he succeeded. J. S.

WASHABLE CEILINGS.

Sir,—Can any of your correspondents suggest a material with enamelled surface, not too thick or heavy, to be affixed to the ceilings of places of business (where much gas is burnt), that could be easily washed or cleansed, and so avoid the interruption of business, as well as the dirt and confusion, caused by the use of whitewash? F. R.

ACCIDENTS.

Fall of a Building in Lambeth.—A building in Marlborough-street, New Cut, in the course of erection for the School Board, has fallen in. The building is situated near the workhouse, and at the time of the accident five men were engaged on the scaffold, and others on the lower portion. All at once the men observed the walls bulge, and the wing, which is three stories high, fell, burying several men under the ruins, who have received more or less severe fractures and other injuries.

Fall from a Scaffold in Gateshead.—An inquest has been held by the Newcastle coroner on the body of James King, a labourer, who died in the Newcastle Infirmary. The deceased with other three or four workmen were carrying a large stone, weighing about 5 cwt., on the scaffolding of a new church at Gateshead Low Fell, when one of the planks broke, and the deceased and another workman fell into a cellar, a depth of about 24 ft. He died in about an hour and a half after being admitted to the Infirmary. The jury returned a verdict of "Accidental death."

Fall of a School Roof.—The roof of the Christian Brothers' School, Mountjoy-street, Dublin, fell in while sixty scholars were on the benches. Several were seriously hurt, but no deaths were expected to occur.

FROM SCOTLAND.

Edinburgh.—A memorial window to the late James Moncrieff Melville, W.S., of Hanley, has been erected over the gallery in the north aisle of St. John's Episcopal Church, completing the range of stained-glass windows on that side of the building. The design, which has mosaic crystalline colours, contains in the centre light an illustration of our Lord holding in one hand a book with the inscription "Alpha and Omega," and in the other a cruciform sceptre. The background is a deep ruby with gradated clouds, upon which the figure stands. The two side lights are illustrated by angels bearing texts. Messrs. Ballantine & Son are the artists, and we believe they have also in hand the corresponding window in the south aisle, which is to be placed there to the memory of Dean Ramsay. When that is done the entire series of windows in this church will be completed.

Moffat.—It is proposed to erect a hydropathic establishment in Moffat, at a cost of about 40,000*l.* A large amount of the capital has already been subscribed, and a suitable site has been acquired for the building.——The directors of the Bank of Scotland are to erect a spacious building for their branch bank at Moffat. The cost of the building, inclusive of site, will be about 4,000*l.*

Elgin.—The rise in wages and the prices of building materials have effectually put a stop to building in Elgin. Scarcely a house is at the present moment in course of erection in the town, says the local *Courant*, whereas in former years it was no uncommon thing to see two or three going up at one time in every other street. Families can be named by the half-dozen who wish to come to settle in Elgin, and are only kept away by sheer want of house accommodation. The deficiency at the present time is chiefly in the larger class of houses, not one of which is to be found unoccupied, furnished or unfurnished. However, a proposal has been mooted for making up for the lack of private enterprise by the establishment of a Joint-Stock Company. A scheme has been thought of whereby a great deal could be done in the way of building superior dwelling-houses with a very moderate amount of capital.

The Artizans' Institute.—The inaugural *soirée* of this association will be held on Wednesday next, the 14th instant. Premises have been secured in Castle-street, Upper St. Martin's-lane.

CHURCH-BUILDING NEWS.

Clewer.—The opening of St. Stephen's Church, Clewer, has taken place. The style of the building is Early English. The chancel is 30 ft. in length and 20 ft. in breadth, and since its opening a Decorated groined roof has been added to it. The east wall has been stencilled to imitate a reredos, which it is contemplated to provide hereafter. These stencillings consist of the initials "X.P.C." and "I.H.S." in alternate spaces right and left of an altarpiece, representing Christ carrying a lamb, painted by Mr. W. Strange. This is surmounted by the words, "The Lord is in His holy Temple. Let all the earth keep silence," which extends in one line across the wall. Above this there is one lancet-shaped window. The communion-table, or altar, is some few inches from the wall, against which a super-altar, with marble top, is fixed. The steps approaching the altar will be laid with Minton's mosaic tiles, in pattern. In the original building there was an archway opening from the chancel; but this has been filled in, and sedilia and credence-table now occupy the space. The choir-stalls are at present of plain stained deal; but this is also regarded as temporary. The chancel is separated from the nave by a large arch, filled in with a carved oak screen, surmounted with a large cross, the whole at present being plain wood; but this will receive a varnish. The decoration of the roof and the east wall has been carried out by Messrs. Harley & Fisher, of London. The nave, into which from the chancel there is a descent by two or three steps, is 72 ft. in length, and 24 ft. wide, the side-aisles being each 10 ft. wide, giving a total width of 44 ft. The height of the nave to the pitch of the roof is 52 ft., and the side-aisles, which are covered by a lean-to roof, are 34 ft., the outer walls being 14 ft. high. The aisles are separated by an arcade of pointed arches, which support the clearstory windows, which are in pairs over each arch. The shafts of the pillars are of Forest of Dean stone, and the caps, bases, and arches of Bath stone. The entrance to the nave is by doors at the east and west ends of the north aisle. In the western wall are a row of lancet-shaped windows, surmounted by a rose-window. In the outer walls of the aisles there are a series of lancet-shaped windows. The church is seated with plain stained deal forms, with backs, and rush-bottomed chairs. The aisles are laid in cement; but the complete plans contemplated its being laid in Minton's tiles. The roof is open, and is composed of plain oak. The whole of the interior is stuccoed. On the south side of the chancel, which communicates with the chancel and with the south aisle, is an incomplete room, intended for the vestry. The door in the south aisle is incomplete, but some carving is contemplated. An organ is said to be very urgently needed, and 300*l.* is the sum proposed to be expended upon it. The building is of stock bricks, with Bath stone dressings for windows and doors. There is a bell-turret springing from the junction of the nave and chancel. It is surmounted by a finial and weathercock, the total height being 90 ft. from the ground. The building will be enclosed by an iron railing, of the same character as that in front of the House of Mercy. The architect of the building is Mr. W. Woodyer, of Graffham, Guildford; and the works have been carried out by Messrs. Wheeler, Brothers, of Reading, contractors, under the superintendence of Mr. J. Walker, clerk of the works. The church will be lighted with gas. The heating arrangements are by Messrs. Remington & Co., of Skipton, Yorkshire, and there are open gratings in the nave through which warm air will find its way into the building from the piping concealed beneath. With reference to finance, it is stated: "By the kindness, chiefly of two friends,—one of whom gave 3,000*l.*, and the other 1,200*l.*, to which was added the less considerable but very valued help of others,—we were enabled to commence building the nave of the church." The contract was for 4,327*l.*; but there have been many extra expenses,—viz., sittings, gas, heating, &c.,—leaving a debt of at least 800*l.*, which (unless some unforeseen help comes) must fall as a burden upon the offertory. About 1,000*l.* are also needed to complete the vestries and the rest of the church as originally designed.

Hastings and St. Leonard's.—The new church of Emmanuel, on the West Hill, has been consecrated. Mr. Skoller was the architect; Mr. J. Howell, the builder; and Mr. Murray, clerk of the works.

Moseley.—The new church of St. Anne, at Moseley, Birmingham, has been consecrated by the Bishop of Worcester. The church has been built at the sole cost of Miss R. Anderton, of Moseley, Wake Green, on a site given by Mr. W. F. Taylor, of Moseley Hall. It is in the Early English style of architecture, situated near the top of Park Hill, adjacent to the Moseley-road. The building will furnish accommodation for 400 persons—251 in the nave, 50 in the north aisle, 66 in the south aisle, and 30 in the chancel. The cost of the church is between 6,000*l.* and 7,000*l.*

Marston.—The church of St. Paul, Marston, and the burial-ground attached thereto, have been consecrated by the Bishop of Chester. The architect was Mr. Douglas, of Chester, and the contractors were Messrs. Joseph & John Beswick, Knutsford. Mr. Walter Edwards discharged the duties of clerk of the works. The edifice affords accommodation for between 300 and 400 persons, the whole of the sittings being free, open, and unappropriated. It is built in the early Gothic style of architecture, and consists of nave, north aisle, chancel, organ-chamber, and vestry, the entrance-porch being on the north side, and a low spiral tower at the west end, with a baptistery underneath. The building is of brick, moulded ones being used for the piers, arches, windows, and doorways. The whole of the structural timbers of the roof are dressed and exposed to the church. The nave is separated from the north aisle by an arcade of four arches executed of bricks. In the construction of the pulpit, which is placed at the north side of the nave, timber of a light colour has been used, in the front being a representation in paint of St. Paul preaching at Athens. The windows consist of cathedral glass of various tints. The centre light of the east window is composed of stained glass, portraying the conversion of St. Paul; and it is also intended to fill the side lights with glass bearing illustrations of incidents in the life of the Apostle.

Books Received.

Railway Curves: a Complete, Practical, and Easy System of Setting out Railway Curves with Accuracy and Despatch. By JOHN LEAN, C.E. Kent & Co., Paternoster-row.

MR. LEAN is a practical engineer, and here gives to students, in a very little book, the rules which have served his purpose in everyday work, and which will well serve them likewise. He includes formulæ for calculating angles of intersections for permanent way fittings, and setting out switches and crossings. The next edition may be improved by a little further revision: for example, the tangent line, on which much depends, is not lettered in Figure 1.

VARIORUM.

"The Last of the Derwentwaters."—Such is the title of a paper read to the Keswick Literary Society by Mr. J. Fisher Crosthwaite, a distinguished member of the Cumberland Archæological Association, now printed in an octavo pamphlet, and illustrated with much judgment by Mr. E. J. Grayson, the local secretary. The subject-matter is beyond our province; and, as Southey properly held, it is even at this hour an unpleasant theme. Nevertheless, the day has arrived at which we must not permit a disagreeable sentiment to interfere with the great work of historical criticism and authentic research; and we must therefore thank Mr. Crosthwaite for his monograph. The main object of the paper is to rescue from oblivion memories of the ancient parish of Crosthwaite.——Owen Jones's "Grammar of Ornament." We are glad to see that Mr. Quaritch is publishing this valuable work in monthly parts, at 2*s.* 6*d.* each, to be completed in 28 parts.——In the *Art Journal* mention is made of Michelangelo's house in Paris:—"The Casa Buonarroti, taking a prominent place in the personal history of the artist, obtains corresponding position in the programme of proceedings: within this house, indeed, the minor as well as the major details of a life may be filled in. And it is easy to imagine how the innate love for relics which has been planted in the human heart will be gratified when the visitor is allowed to see, or even to handle, the sword, the walking-sticks, the slippers, the writing-table which Michelangelo used or wore in Florence. It is a little disappointing that few, if any, of the instruments of art have come down to us, and I cannot but think there must have been indifference, or even worse, in dealing with the contents of the Roman studio. It is true that we have here sundry inscriptions, urns, and other small pieces of ancient sculpture, found in the *atelier* after death; but what would we not have given for the chisel and the mallet wherewith it is said that 'Michelangelo, at the age of sixty, and with a body announcing weakness, made more chips of marble fly about in a quarter of an hour than would three of the strongest young sculptors in an hour, a thing almost incredible to him who has not beheld it.' The contemporaries and immediate survivors of even the greatest of men are proverbially unconscious of the conditions of posthumous fame, and of the demands which in the course of centuries may be made by posterity."

Miscellanea.

Large Ironworks.—Some of the largest ironworks in the world are in the North of England. The works of Messrs. Bolckow & Vaughan, at Middlesbrough and Witton Park, are specially entitled to take rank in this category, and it is rather a notable fact that the firm who initiated the iron trade of Cleveland should, within twenty years of that event, have become what is believed to be the largest iron-making concern in the world. The capital of the company was fixed at 2,500,000*l.*, and 1,000,000*l.* was paid for the purchase of the properties and stock. Since then the nominal capital of the company has been increased to 3,410,000*l.* In addition to the blast-furnaces at Middlesbrough, Eston, and Witton Park, the rolling-mills at the former and the latter places, and the great mines at Eston and Skelton, it holds,—with perhaps only two, or at the most three exceptions,—the largest coal royalties in the North of England, and carries on large steel-works in Manchester. Upwards of 16,000*l.* are paid weekly in wages and salaries, and over 12,000 hands are employed. The company raise about 1,500,000 tons of coal per annum, and from their Eston mines alone they are now producing between 700,000 and 800,000 tons of ore yearly. Of the 250,000 tons of pig-iron which they annually produce the company convert nearly 100,000 into rails, plates, bars, and other descriptions of manufactured iron. They have within the last few years acquired extensive royalties in Spain, and from their mines at Bilbao they raise large quantities of hematite, for the conveyance of which to their Middlesbrough works they employ a fleet of steamers of their own. Messrs. Bolckow & Vaughan's establishments produce general machinery, castings, fire-bricks, and rolling stock; and the number of wagons which they own and employ in connexion with their numerous works and collieries is something fabulous.

Mechanical Vibration Retarding Rust.—At a recent meeting of the American Association for the Advancement of Science, Professor S. S. Haldeman, of Harrisburg, read a paper with the above title, of which the following is a brief abstract:—When railroad bars are piled beside a road they soon become rusted, while those forming the tract are but little subject to oxidation; and when a rain of some hours' duration falls upon rails when in a state of rest, as upon Sundays, when trains do not run, they soon exhibit rust. This would seem to indicate that in chemical combination mechanical vibrations may interfere with the molecular arrangement of the elements. The accuracy of these casual observations should, however, be submitted to the test of experiment. In the discussion which followed this brief communication it was suggested that possibly the oil employed upon locomotives might be more or less spread in a thin film over the rails in use, and thus prevent their oxidation. This view was earnestly combated by other speakers. Professor Van der Weyde was quite certain that the suggestion of Professor Haldeman bore reference to a fact in physics. Molecular vibrations tended to prevent rust. A saw hung up, unused, would soon become rusty; if used, would keep bright. This was a general experience with tools.

Blacktoft.—Construction of a Pier.—The Aire and Calder Navigation Company are now engaged in the construction of a pier at Blacktoft, on the Yorkshire coast of the Humber. The pier is being built of very great strength, and will be 180 ft. long.

A Relic Shrine.—In the church at Marcel, Lorraine, which still retains several very beautiful and remarkable relics of the twelfth and thirteenth centuries, there has lately been discovered a relic-shrine, which must formerly have stood before the high altar, but which now occupies an altogether inappropriate position. This small *chef d'ouvre* is cut out of a fine white sandstone, and is in the form of a church with five naves; it is 75 centimetres in length, 31 in breadth, and 35 in height. Each compartment of the shrine is externally in the form of a niche, and ornamented with rich mouldings. On one of the long sides, in bas-relief, is represented the adoration of Christ by the three kings; in the order, Christ in the centre, with Peter and Paul on the right, and John the Evangelist and John the Baptist on the left. On the short sides are represented, respectively, the glorification and the annunciation of the Virgin. The sculptures are almost entirely intact, and of masterly execution. Several groups appear to be exact copies of sculptures in the Cathedral of Rheims, so that it may be concluded the little monument originated in that town. The workmanship is of the beginning of the fourteenth century, to which time the sculptures of Rheims belong. It is further remarkable that the shrine shows traces of painting and gilding. This art-work, with the permission of the Ober-Präsident of Alsace-Lorraine, will be restored and placed again in a proper position in the church of Marcel. In the same church has also been discovered a bell, of the sixteenth century, with the inscription:—"Zu Marcel gnädich bin ich. Maister Conrat von Vich gos mich. Anno 1508."

The Metropolitan Gas Question.—In the Court of Common Council last week, Mr. Shaw, chairman of the Gas and Water Committee, called the special attention of the Court to the gas question, and to the manner in which it now affected the citizens, demanding, as he thought, serious consideration and prompt action in the public interest on the part of the Corporation. The Gas and Water Committee had presented an elaborate report to the Court on the whole question, especially as it affected the citizens. They recommended that they should be authorised to confer with the Board of Trade with a view of bringing the several matters upon which they had reported under the more immediate notice of the President, and of inducing him to take steps to remedy the evils adverted to, or, if necessary, to favour the introduction of a measure to remedy the abuses existing under present legislation. Mr. Shaw concluded by moving the adoption of the report of the committee, and that the committee be instructed to take whatever steps they might think necessary to ensure a satisfactory supply of gas to the citizens. The subject gave rise to a discussion, and the motion of Mr. Shaw was adopted almost unanimously.

Decoration of St. Paul's Church, Stafford.—This church has been re-opened for Divine service. The walls of the nave and transept are painted a reddish purple; the principal timbers of the roof are stained and varnished; and the chamfers of the rafters are picked in vermilion. The greatest display of the decorator's art, however, is reserved for the chancel. Here, the dado has a blue ground, embellished with fleur-de-lis, sacred monograms, and various other symbolical designs, finished in green and gold. The walls above the dado have a cream-coloured ground, diapered with gold, purple, and vermilion. The dado and the diapered walls are separated by a gold ground, having a band of vermilion and blue. The roof of the chancel is adorned with gold stars upon a sky-blue ground; the beams and principals are picked in light buff, and the chamfers in vermilion. The space upon each side of the east window contains a large scroll upon a cream-coloured ground. The sittings throughout the church have been cleaned and revarnished. The work has been carried out by Mr. Arthur Gee and Mr. William Hollis.

American Society of Civil Engineers, New York.—A committee of this Society has been appointed to investigate the necessary conditions of success, and to recommend plans for,—first, the best means of rapid transit for passengers; and, second, the best and cheapest methods of delivering, storing, and distributing goods and freight in and about the city of New York; with instructions to examine plans, and to receive suggestions such as parties interested in the matter may choose to offer, and to report on or before the 1st day of December, 1874.

New Harbour at Boulogne.—A commission appointed by the French Government to inquire into a plan for a projected deep-sea harbour at Boulogne has just held its first sitting at that port. The plan has been designed to overcome the objections to a former scheme, which was rejected by the Council General of the Ponts-et-Chaussées, on the ground that it would cause the silting up of the present harbour; and the total estimated cost of carrying it out is 12,500,000 fr., which amount the South-Eastern Railway Company has obtained Parliamentary sanction to expend in improving harbour accommodation on the French coast. The new plan comprises a main pier 1,400 mètres in length; a stone jetty, 100 mètres to the west of and parallel to the steam-pier; an extension of the present east jetty 1,200 mètres; stone breakwater, 300 mètres long; and the reclamation of a large portion of the foreshore. The Boulogne New Harbour Company ask for a concession for ninety-nine years, at the expiration of which period the property will revert to the State, and the possession in perpetuity of the reclaimed land. The length of the new harbour will be over three-quarters of a mile, and the width upwards of one-third of a mile.—*Galignani.*

Memorial of the Duke of Kent. — It is stated that her Majesty intends erecting a monument in memory of his late Royal Highness the Duke of Kent in St. George's Chapel, Windsor Castle. The site selected by the Queen is the south-western corner of the nave, beneath the south aisle, and including what was formerly known as the Beaufort Chapel. The Beaufort tomb has been removed, and the walls are being restored. Some little time previous to the visit of the Belgian volunteers to Windsor Castle her Majesty had erected in St. George's Chapel a white marble memorial,—a bas-relief,—of his late Majesty Leopold, King of the Belgians. The sculpture was executed by Miss Durant, and it was affixed to the wall at the end of the south aisle close to the Beaufort Chapel. Within the last few weeks the Leopold memorial has been removed to Claremont Church (Esher), Claremont House having been the residence of Princess Charlotte, the late King's Consort,—the site which it occupied in St. George's Chapel being required for the Duke of Kent's monument.

The Reconstruction of the Liverpool Landing Stages.—At a meeting of the Liverpool Dock Board, a report was read from Mr. G. F. Lyster, the dock engineer, in reference to the reconstruction of the landing stages. He recommended that the timber cross-beams of the original stages be superseded, and transverse beams of wrought iron introduced instead. This arrangement would obviate the necessity of having any timber whatever in the main structure, with the exception of the outside fender and rubbers. With regard to the deck, he expressed his opinion that greenheart timber laid as thin as would be consistent with strength would be the most suitable material either for the general traffic on the stage or to meet the varying undulations to which a structure of such great length must necessarily be subject. Abreast of each bridge special provision would be made by means of deep girders for the ready separation of the deck in case of another fire. After a short discussion the report was adopted.

Dunstable Town-hall, Plait-market, and Corn-exchange.—The new building which has been erected by the Dunstable Corporation for the purposes of a Town-hall, Plait-market, and Corn-exchange, has been formally opened for these several objects by the mayor, Mr. E. Lockhart, in the presence of a large company of townspeople and visitors. The new structure, says the *Bedford Times*, is an enlargement of the old Town-hall, which was erected in 1803 by the Duke of Bedford, to whose family the property had belonged for three generations, and the purchase of the site was negotiated by the present Corporation through the Commissioners of Woods and Forests. The architect is Mr. Henry Elliott, of London, son of the late Mr. Wm. Elliott, of Dunstable, and a native of the town. The upper room is used as a magistrates' court, while the large hall beneath is to serve as a Plait-market and Corn- exchange. The whole is surmounted by a clock-tower over the entrance.

Wood Paving.—We are informed that the Patent Ligno-Mineral Paving Company, Limited, have obtained the contracts for wood-paving lately advertised for tender by the Corporation of Hull.

Society of Engineers.—At the first ordinary meeting for the session, Mr. Macgeorge, in the chair, congratulated the society on their first meeting this session, and expressed his regret at the loss of Sir William Fairbairn, an hon. member of the society, in whose place Dr. Siemens was elected. They had also to deplore the loss of Lieut. Bigsly, R.E. During the vacation members of the society visited London-yard Works, East Greenwich; the Imperial Gas-works, Bromley; the Dicey steamship *Castalia*, Frost's Rope-works, and Henley's Telegraph Works. Mr. Perry F. Nursey then read a paper on "Mechanical Puddling." The author, having expressed his strong opinion in favour of mechanical as contrasted with manual puddling, gave an historical account of the efforts which have been made in America and this country in the direction of mechanical puddling.

The Water Supply of Pontefract.—The first brick has been laid in Pontefract Park by the Mayor in connexion with the new reservoir to supply the town and new military centre in future with water. The tank about to be formed in the bed of the Park-hill is intended as a storage of water, the town hitherto being entirely without water between ten o'clock in the evening and six in the morning, as the present waterworks are quite inadequate to the demands. The excavations have been completed by the contractor, Mr. Isaac Marsh, of Castleford, and are capable of storing 360,500 to 400,000 gallons of water, which will be forced through pipes from the present works to the reservoir. The contract for laying the pipes, &c., is being carried out by Messrs. Speight & Sons, of Leeds.

Saxon Remains.—It is stated that the investigations in the marsh at Cookham, by Mr. William Donald Napier and Mr. Alfred Heneage Cocks, have been rewarded with success. On the 14th ult. a tumulus was opened, and found to contain, besides other objects of interest, the skeleton of a Saxon warrior. The figure lay facing the north, 2 ft. 6 in. from the surface of the mound, which rises to about 3 ft. from the present level of the marsh, and is surrounded by a well-defined ditch. Covering the right shoulder was the umbo or boss of a shield which, in all probability composed of wicker or hide, had itself long since perished. The umbo, which is a very fine specimen of early Saxon ironwork, is about 6 in. in diameter and conical in form, being surrounded by raised bolts, and with what may have been a spear-point rising from the centre.

London Association of Foremen Engineers and Draughtsmen.—At the monthly meeting of this institution, held at the City Terminus Hotel on Saturday last, Mr. Joseph Newton, C.E., in the chair, Sir David Salomons, bart, read a paper on the "Electric Telegraph." By aid of a variety of apparatus, beautifully constructed, many experiments were shown illustrative of the author's observations, which were both practical and theoretical in character. At the close of the meeting, the chairman congratulated Sir David on his possession and successful cultivation of scientific tastes. In the course of the sitting the Rev. H. Solly explained the plans and principles of the Artizans' Institute which is about to be opened in Upper St. Martin's-lane, and invited the Foremen Engineers to support it. The meeting was a crowded one.

Carlisle Victoria Hall.—The Victoria Hall, the larger of the two new public halls in course of erection in this city, is now rapidly approaching completion. The whole of its constructive features are complete, and all the work now remaining to be done consists almost entirely of internal fittings. This is being pressed forward in order that all may be ready for the opening night on Monday, the 26th of this month, when the Choral Festival is to take place. Before opening the hall, the directors of the Public Hall Company purpose having a careful inspection made of the building, in order that no doubts may be entertained as to its security.

Powder Magazine.—Public attention should be directed to the extremely dangerous position of the Powder Magazine abutting closely on Kensington Gardens, and to a public roadway running by the Serpentine, concerning which we have before now spoken. A more ill-considered position could not be selected for such a purpose, one requiring comparative isolation, and case-mating.

The Chapel Royal, Savoy.—The little building known as Savoy Chapel, which lies in a back street off the Strand, has recently undergone repairs, which have improved its internal aspect. The chapel is the property of the Queen as Duchess of Lancaster. The organ has been repaired. The walls have been repainted, and the various inscriptions retouched; while the pulpit has been moved a step or two into the chancel—an arrangement which has made room for a couple of pews designed for the use of the Chancellor of the Duchy. A work on the subject of the Savoy Palace is being prepared by the Rev. Mr. White and Mr. Loftie, the chaplain and assistant-chaplain respectively of the chapel. A suggestion has recently been made as to the addition of a painted window. This chapel appears to be always undergoing restoration.

The Proposed Skeldergate Bridge, York. A meeting of promoters of the scheme for the erection of a new bridge over the river Ouse at Skeldergate-ferry, has been held, the object being to form an association to assist in carrying out the project. Unlike the meeting of the opponents to the scheme held on the previous evening, the presence of the citizens generally and the representatives of the Press was welcomed. Mr. J. Close moved:—"That an association be formed for the purpose of carrying out the resolution agreed to at a public meeting of the citizens held in the Guildhall on Friday last; that those gentlemen now present form the nucleus of such association, with power to add to their number; and that Mr. T. Wood be requested to act as secretary." After some discussion the motion was unanimously adopted.

Monument at Torres Vedras.—A large monolith will shortly be transported from the quarries of Pero Pinheiro to Alhandra, on the Tagus. The stone is destined to form part of a monument to be erected on the ancient lines of Torres Vedras, to commemorate the famous stand made there by the British and Portuguese forces under Wellington, by which was frustrated the second French invasion of Massena in 1810. The lines are still clearly traceable, from Alhandra on the Tagus to Ericeira on the Atlantic. The design, as traced by Senor Cascaes, represents a column with a statue of Hercules, clad in the lion-skin, with club in hand. On the pedestal is the inscription in Portuguese, "Lines of Torres Vedras," and the Latin motto "Ne plus ultra."

The New Barracks at Normanton, near Bristol.—The work connected with this establishment, which is to be the headquarters of the Derby military centre, has now commenced in earnest. The contractors are Messrs. Parnell & Sons, of Rugby, who have carried out many extensive works, and the men are now engaged in making the excavations for the foundations, having commenced during the present week. The work has been delayed owing to the contractors, who sent in the lowest tenders, having declined to carry them out. The building and drill-ground will cover an area of 10 acres. Captain Parnell, of the Royal Engineers is the superintending officer, and the amount of the contract is between 46,000*l.* and 47,000*l.*

The Regent's Canal a Sewer.—The public are not perhaps aware of the dangers encountered by living on the banks of the Regent's Canal. Pestilental exhalations are occasioned by the passage of the steam tugs and barges, and it appears that ever since the Zoological Gardens have been in existence the Society have used the canal for sewerage purposes, having no proper drainage of their own. Attempts have been made to compel the Zoological Society to construct proper sewers for the outlet of the filth from the caged-up animals, urinals, &c., but without effect. Let us hope now that some legislative interference may be instituted. It is also said that many houses are drained into the canal.

The Severn Tunnel Scheme.—This great undertaking, which is to connect South Wales with the West of England by a continuous line of railway, is beginning to assume a practical form. The preliminary shaft which the directors of the Great Western Railway caused, at a large expenditure of money, to be sunk, having satisfied them that the strata through which the tunnel will have to pass are satisfactory, the board is now preparing to drive a 6 ft. heading at the Portskewet end. They have accordingly advertised for tenders for the completion of the first 750 yards of this heading. The tunnel will doubtless take some years to complete.

Smoke Nuisance.—At the Eddisbury Petty Sessions, Mr. Falk, owner of the Meadow Bank Salt Works, Over, was summoned for permitting a nuisance. Mr. H. Bennett, Sanitary Inspector, said the defendant had forty chimneys on his works, and they averaged about 15 ft. high. His observations showed that there was from them a continuous issue of smoke for fifty-eight minutes down to twenty-two minutes. The Bench fined the defendant 8*l.* 10*s.*, and costs, 8*s.* 6*d.*, being at the rate of 5*s.* a day for each chimney.

Drawing for All.—It was resolved at the last meeting of the London School Board, that systematic lessons in drawing be given in all the Board schools, so that all the scholars might have an opportunity of learning the same, and that it be referred to the School Management Committee to consider and report as to the arrangements necessary for carrying this resolution into force. We congratulate Mr. Lucraft, who brought about this decision.

St. Alban's Abbey.—At a meeting of the National Committee for the Reparation of St. Alban's Abbey, held on Saturday, Lord Verulam in the chair, it was resolved to proceed with the work westward from the tower as far as St. Cuthbert's screen, so as to render that portion of the building, which until lately was used as the parish church, again available for divine service. Nothing has yet been done beyond what is necessary to keep the fabric from becoming a ruin.

New Goods Station in the City.—The Midland Railway Company are about to erect, on the site of the old Whitecross-street Prison, at a cost of 130,000*l.*, an extensive goods station and range of warehouses, forming their City goods depôt. The warehouses, built of red brick, with Portland-stone dressings, will be amongst the loftiest buildings in the City, the total height being 80 ft.

Sale of Cyfarthfa Ironworks.—Messrs. Crawshay, the great ironmasters of Cyfarthfa, in South Wales, have recently disposed of their business to Messrs. Williams, the largest copper smelters in Cornwall, for the sum of one million sterling. The deposit-money has already been lodged, and the transfer will take place without delay.

Crewe.—The chief stones of the Heath Memorial Primitive Methodist Chapel at Crewe have been laid. The building will be in the Norman style of architecture. Mr. W. Mossford, of Crewe, has the contract for supplying the stonework.

TENDERS

For Camberwell New-road Catholic and Apostolic Church. Messrs. John & John Belcher, architects. Quantities by Mr. T. B. Insoll:—

Simpson	£9,647 0 0
Conder	9,598 0 0
Colls & Sons	9,470 0 0
J. & F. Coleman	8,888 0 0
Downs & Co.	8,830 0 0
Thompson	8,660 0 0
Jarrett	8,298 0 0
Bracher & Sons	7,790 0 0
Gregory	7,733 0 0
Braid, Jopling, & Co.	7,600 0 0

For board-room and registrar's and other administrative offices, in the New-road, for the Guardians of the Poor of the Parish of St. Marylebone. Mr. Henry Saxon Snell, architect. Quantities supplied by Mr. R. Griggs, Messrs. Lansdown & Pollard, and the architect:—

Garrod & Smith	£7,800 0 0
Aitchison & Walker	6,845 0 0
Temple & Forster	6,644 0 0
Wall, Brothers	6,598 0 0
Chappell	6,400 0 0
Simpson & Baker	6,400 0 0
Staines & Son	6,186 0 0
Bracher & Son	5,995 0 0
Bangs & Co.	5,914 0 0
Braid, Jopling, & Co.	5,900 0 0
Crockett (accepted)	5,899 0 0
Lovell	5,787 10 0

For hospital, at Grantham. Mr. R. Adolphus Came, architect. Quantities by Mr. Heelis:—

Nightingale	£5,589 0 0
Longley, jun.	5,450 0 0
Pattinson	5,122 0 0
Rudd & Son	5,000 0 0
Foster	4,822 0 0
Challens	4,635 0 0
Hobson & Taylor (accepted)	4,455 0 0

For alterations, &c., to Mr. Crake's residence, at Eastbourne. Mr. R. K. Blessley, architect:—

Peerless	£768 10 0
Vidler	719 10 0
Skinner (accepted)	696 15 0

For levelling and draining a new cemetery at Codnor, Derbyshire. Mr. S. J. Barber, architect:—

Marsh	£354 10 0
Shaw	324 16 0
Fretwell	312 0 0
Palmer (accepted)	275 0 0

For erecting four houses, being the second portion of the west wing of the London Foresters' Asylum, Bexley Heath. Mr. W. F. Potter, architect. Quantities by Mr. C. R. Griffiths:—

	Houses.	Boundary Wall.
Butler	£1,011 0	£39
Woodward	927 0	40
Gammon & Sons	923 0	42
Carey	888 0	34
Sabey & Son	850 0	34
Larke	840 0	36
Knight	747 0	33
Ellingham	720 0	38
Burton	670 0	38
Vickery (accepted)	655 0	39
Clark	641 10	38

For the following schools for the Burton-on-Trent District School Board. Messrs. Giles & Brookhouse, architects. Quantities supplied:—

School at Hodnington:—	
Neale & Beach	£2,031 18 7
Smith	2,400 0 0
Maddocks	2,279 18 0
Wileman	2,222 0 0
Bowler & Beck	2,200 0 0
Potter	2,186 0 0
Mason (accepted)	2,130 0 0
School at Stretton:—	
Neale & Beach	£1,504 7 6
Wileman	1,379 0 0
Hadfield	1,332 0 0
Smith	1,300 0 0
Maddocks	1,276 0 0
Mason (accepted)	1,265 0 0
School at Uxbridge-street:—	
Hunter	£3,315 0 0
Maddocks	3,130 0 0
Bennett	3,075 0 0
Mason	3,060 0 0
Wileman	3,038 0 0
Chamberlain	3,025 0 0
Hadfield	2,900 0 0
De Ville	2,874 0 0
Smith (accepted)	2,700 0 0

For new club-house in the King's-road, Brighton, for the Brighton New Club Company (Limited). Mr. Thomas Lainson, architect. Quantities supplied by Mr. B. H. Nunn:—

Scrivener & White (too late)	£14,998 0 0
Brass	14,935 0 0
Waldram & Co.	14,800 0 0
Manley & Rogers	14,826 0 0
Dove, Brothers	14,795 0 0
Browne & Robinson (too late)	14,750 0 0
Newman & Mann	14,739 0 0
Lockyer	14,370 0 0
Merritt & Ashby (too late)	14,300 0 0
Cheesman & Co.	14,678 0 0
Howard	13,970 0 0
Barnes (accepted)	13,770 0 0
Eldridge (withdrawn)	11,550 0 0

For the remaining portion of the new workhouse, Derby. Messrs. Giles & Brookhouse, architects:—

J. & E. Wood (accepted)	£22,900 0 0

For reservoir and engine-house for the Waterworks Company, High Wycombe. Mr. J. Wilson, engineer:—

Hook & Oldrey	£1,480 0 0

For new stable and coach-house, for Mr. Howgate, Westbourne-park. Mr. W. Greaves, architect:—

Hook & Oldrey (accepted)	£270 0 0

For alterations to house, dairy, &c., at Uxenden Farm, Wembley, Harrow, for Mr. Land. Mr. W. Greaves, architect:—

Hook & Oldrey (accepted)	£620 0 0

For Christian Mission Hall, Hackney. Mr. G. Jackson, architect:—

Payne & Stanger	£1,564 0 0
Dabbs	1,400 0 0
Lewis	1,300 0 0
Mason & Bristy	1,285 0 0
Jefferson	1,275 0 0
Iles	1,250 0 0
Lose	1,170 0 0

For Barbican Chambers, London. Mr. C. Stone, architect:—

Nightingale	£3,484 0 0
Merritt & Ashby	3,355 0 0
Bangs & Co.	3,280 0 0
Crabb	3,253 0 0
Shurmur	3,099 0 0
Perry & Co.	3,098 0 0
Elkington	3,025 0 0

For stabling, loose boxes, cottages, &c., at Hammersmith, for the London General Omnibus Company (Limited). Mr. P. Toah, architect. Quantities by Mr. A. J. Bolton:—

Warr	£8,774 0 0
Stephenson	8,504 0 0
Taylor	8,500 0 0
Hunt	8,480 0 0
Williams	8,200 0 0
Cowper	8,077 0 0
Marsh	8,074 0 0
Bayes & Ramage	7,889 0 0
Temple & Foster	7,700 0 0
Mason & Bristow	7,525 0 0
Garraud	7,483 0 0
Saw	7,383 0 0
Turrell	7,210 0 0
Chamberlain	7,169 0 0
Lewis	7,000 0 0
Parsons	6,949 0 0
Gill	6,946 0 0
Crockett	6,835 0 0
Aitchison & Walker	6,786 0 0
Perkins	6,650 0 0
Niblett & Son	6,565 0 0